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FINAL REPORT:
STUDY OF WIC PROGRAM
AND PARTICIPANT CHARACTERISTICS

CONTRACT NUMBER 53-3198-3-135

SUBMITTED TO:

U.S. DEPARTMENT OF AGRICULTURE
FOOD AND NUTRITION SERVICE
OFFICE OF ANALYSIS AND EVALUATION
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STUDY OF WIC PARTICIPANT AND PROGRAM CHARACTERISTICS

EXECUTIVE SUMMARY

Office of Analysis and Evaluation
Food and Nutrition Service
United States Department of Agriculture

Contractor: Ebon Research Systems, Washington, D.C.

Sub-contractor: Abt Associates, Inc., Cambridge, Mass.

March 1986

This report examines the characteristics of participants in the Special Supplemental Food Program for Women, Infants and Children (WIC) and of State and local agencies which operate the program. The WIC Program is a Federal assistance program which provides supplemental foods, nutrition education and access to health care to pregnant, breastfeeding and postpartum women, infants and children up to their fifth birthday. To be eligible, people must have low income (the maximum Federal income standard is 185 percent of poverty) and be at nutritional risk, as diagnosed by a health professional. The goals of the WIC Program are to improve the nutritional and health status of needy people at periods critical in their growth and development and to reduce the incidence of nutrition-related health problems of pregnancy, infancy and young childhood.

In Fiscal Year 1985, the WIC Program served an average of 3.14 million participants per month at a total Federal cost of \$1.5 billion, about 80 percent of which paid for benefits and 20 percent of which supported the costs of nutrition services and program administration. The program is overseen at the Federal level by the Food and Nutrition Service (FNS) of the U. S. Department of Agriculture (USDA) and its seven regional offices. Services are provided by 88 State agencies, which include health departments of the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam and 34 Indian or Native American tribes or tribal organizations. These State agencies administer about 1,600 local agencies which, in turn, operated about 7,500 service sites or clinics.

This report concentrates on four areas: (1) characteristics and policies of State and local WIC programs, (2) socio-demographic characteristics of participants, such as age, race and income, (3) nutritional and health characteristics of participants, and (4) the types and quantities of supplemental foods prescribed for participants. A companion volume, Report on WIC Nutrition Education Services, more closely examines the nutrition education component of the program. This study was

designed to provide a cross-sectional description of WIC participants and the services they received during the period of August to December 1984. The study was not designed to be an evaluation of the effectiveness of the WIC Program, nor should it be interpreted as such. It is a snapshot of the WIC Program in late 1984.

Methodology

Study data were primarily obtained by two methods. First, information about State and local agencies was obtained by a series of mail surveys to a nationally representative sample of State and local agency directors. Second, information about participant characteristics was abstracted by trained data collectors from a nationally representative sample of participants' program records. This study was made possible through the cooperation of hundreds of State and local staff.

Sampling of participant records was achieved through a mixed multi-stage methodology. State and local agencies from the conterminous United States were selected with probability proportionate to the number of participants. Up to two service sites were sampled for every local agency, with one being the agency base and the other, if an agency had multiple sites, randomly selected. Participants were stratified into eight categories (pregnant, breastfeeding and postpartum women, infants and children 1, 2, 3 and 4 years old) and 2 to 3 participants from each category were randomly sampled per service site. Data were collected from 28 State agencies, 204 local agencies, 356 service sites and 6,444 participant records. Study data were checked for quality by comparing them to data reported to FNS for all participants.

The use of participant records to assess participant characteristics ensured that data collected were consistent with administrative determinations of income, nutritional risk and health status. However, since clinic records differed somewhat in content or definitions and because busy staff may not always complete records or keep them up-to-date, information from participant records was also limited. An important step in the study design was the assessment of data availability from records. Some issues could not be addressed because few agencies collected the items of interest.

Major Findings

Distribution of Participants By Category and Age

Table 1 and Figure 1 indicate the distribution of participants by category and age of child. About one-quarter (23.3 percent) of the participants were women and about half of

Distribution of WIC Participants by Category and Age Aug. - Dec. 1984

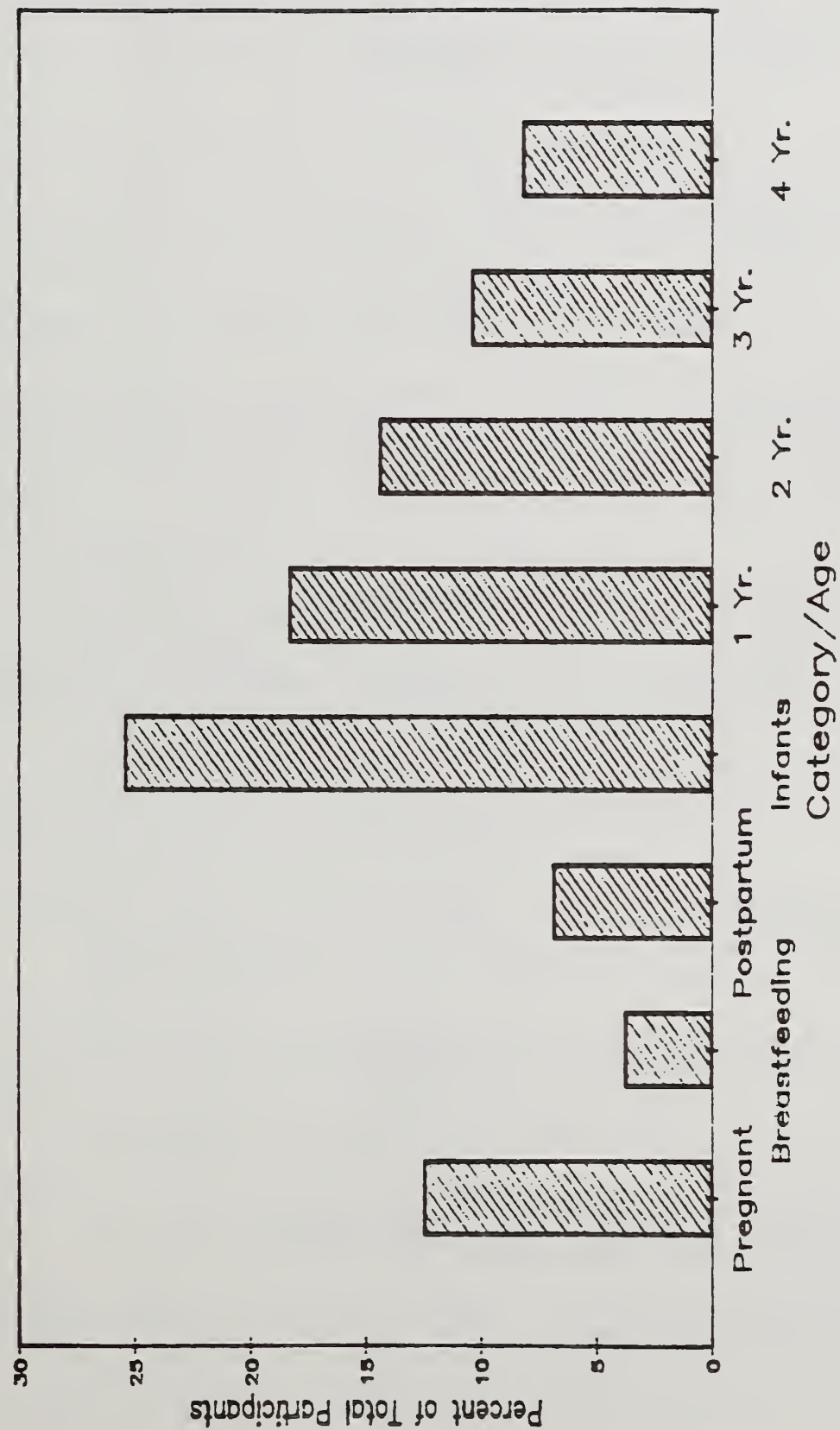


Figure 1

Table 1. Distribution of WIC Program Participants by Category and Age: August to December 1984

=====				
PARTICIPANT CATEGORY/AGE		PERCENT OF CATEGORY		PERCENT OF TOTAL
=====				
WOMEN				

Pregnant Women				
Less than 18 Years	14.4%			
18 Years or More	85.6%			
Pregnant-All Ages	100.0%	53.7%		12.5%
Breastfeeding Women				
Less than 18 Years	3.0%			
18 Years or More	97.0%			
Breastfeeding-All Ages	100.0%	16.3%		3.8%
Postpartum Women				
Less than 18 Years	13.4%			
18 Years or More	86.6%			
Postpartum-All Ages	100.0%	30.0%		6.9%
ALL WOMEN				
Less than 18 Years	12.2%			
18 Years or More	87.8%			
TOTAL WOMEN - ALL AGES	100.0%	100.0%		23.3% 23.3%

INFANTS				

0-3 Months	46.6%			11.8%
4-12 Months	53.4%			13.6%
INFANTS - ALL AGES	100.0%			25.4% 25.4%

CHILDREN				

1 Year Olds	35.7%			18.3%
2 Year Olds	28.0%			14.4%
3 Year olds	20.2%			10.4%
4 Year Olds	16.0%			8.2%
CHILDREN - ALL AGES	100.0%			51.3% 51.3%

TOTAL PARTICIPANTS - ALL AGES AND CATEGORIES				100.0%

SOURCE: Study of WIC Participant and Program Characteristics, 1986

the women (12.5 percent of total) were pregnant. About one-quarter (25.4 percent) of the participants were infants under 1 year old. And about half (51.3 percent) were children 1 to 4 years old (below their fifth birthday). Younger children were more prevalent than older children; for example, there were about twice as many 1 year olds as 4 year olds.

About one-seventh (13 to 14 percent) of the pregnant and postpartum women were under 18 years old. This is substantially higher than the national incidence of teenage births (5 percent for all U.S. births and 11 percent of black births in 1984).

A related issue is the early initiation of prenatal services. About a third of the pregnant women were certified in WIC in their first trimester, a half in the second trimester and a sixth in the last trimester. About three-quarters of the infants were certified within one month after birth.

Distribution of Participants by Priority Level

Federal policy encourages the targeting of benefits to especially needy people through a nutritional risk priority system. At the time of the study, the priority system was:

Priority Level	Description
I	Pregnant and breastfeeding women and infants at nutritional risk, as demonstrated by hematological or anthropometric measurements or other documented nutritionally-related medical problems
II	Infants up to 6 months of age of women who participated in WIC during pregnancy or of women who did not participate during pregnancy, but were eligible during pregnancy under Priority I conditions
III	Children at nutritional risk, as demonstrated by hematological or anthropometric measurements or nutritionally-related medical problems
IV	Pregnant or breastfeeding women or infants at nutritional risk due to an inadequate dietary pattern
V	Children at nutritional risk due to an inadequate dietary pattern
VI	Nonbreastfeeding postpartum women at nutritional risk

In February 1985, after the data were collected, these regulations were modified slightly to permit States to place high risk postpartum women in Priority Levels III, IV or V and to create an optional Priority Level VII for participants certified to prevent regression in nutritional status (i.e., people previously at risk who may relapse without continued assistance).

Table 2 shows the distribution of participants by priority level, as assessed in two ways. First, data reported in agency certification records are shown. Second, priority levels are imputed, based on standard definitions and using the participant category and nutritional risk criteria listed in the records. The imputation process is used for two reasons. First, agencies were sometimes inconsistent in how priority levels were determined. Second, there were occasionally questionable priority ratings, e.g., children given an infant's priority level because the level was not updated. Despite minor discrepancies, the two methods provided similar findings.

About three-quarters (70 to 75 percent) of participants were in the first three priority levels. Almost all the pregnant women and infants were in the first two priority levels and most of the children were in Priority III.

These findings are consistent with the efforts undertaken by agencies to identify high priority applicants. They believed that referral networks with other health or social services, word of mouth, and letters or referral forms provided to local physicians were the most effective forms of outreach.

Income Levels and Household Size

WIC income eligibility criteria vary somewhat across the nation. Federal legislation establishes that the maximum income standard is 185 percent of poverty. From July 1, 1984 to June 30, 1985, this was \$18,870 per year for a family of four. States can establish lower standards that correspond to income standards for free or reduced price health care, provided they do not fall below 100 percent of poverty. In turn, some States permit local agencies to set lower standards. Over two-thirds of the States in the sample used 185 percent of poverty as the income standard. However, the mean income standard established by States in the sample was 176 percent of poverty and by local agencies in the sample was 168 percent of poverty.

Based on reported incomes and household sizes, about two-thirds of WIC participants were below the poverty level and seven-eighths were below 130 percent of poverty. Table 3 and Figure 2 show the poverty status in more detail. The income distribution across participant categories was similar, except that breastfeeding women tended to be somewhat less poor and the postpartum women somewhat more poor. These income data are probably primarily self-declared by applicants.

These data are based on 76 percent of the participants who had actual dollar level incomes reported in their records. Federal rules do not require that income levels or the bases for their determination be kept in certification records. Income distribution was examined in another way. The notation that households participated in the Food Stamp Program, Aid to Families with Dependent Children or Medicaid was identified as

Table 2. Distribution of WIC Participants by Nutritional Risk Priority Group,
Based on Agency Records and Imputed from Nutritional Risks in 1984

PREGNANT BREASTFEEDING POSTPARTUM ALL WOMEN INFANTS CHILDREN TOTAL						
Method 1. Based on Agency Records						
1	91.2%	88.3%	63.3%	47.4%		26.8%
2				40.5%		10.3%
3					73.6%	37.8%
4	8.6%	10.4%	6.3%	10.5%		4.1%
5					22.2%	11.4%
6			90.3%	27.1%		6.3%
7		.2%	.2%	.1%	1.0%	.6%
Questionable*	.2%	1.1%	3.1%	1.2%	3.3%	2.7%
Total **	100.0%	100.0%	99.9%	100.0%	100.1%	100.0%
Percent Reporting						
	91.8%	91.2%	91.5%	92.4%	90.9%	91.4%
Method 2. Imputed from Nutritional Risks						
1	86.6%	69.2%	57.8%	44.7%		24.8%
2				38.3%		9.7%
3					68.8%	35.3%
4	13.4%	29.2%	11.9%	13.8%		6.3%
5					23.8%	12.2%
6			97.1%	29.2%		6.8%
7		1.2%	2.9%	3.2%	7.4%	4.9%
Total**	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Percent Reporting						
	100.0%	99.8%	99.9%	100.0%	99.7%	99.8%

* The questionable category includes cases whose categorization seemed inappropriate.

Example: 1 year olds given infants' priority levels.

**Sums may not total to 100 % due to rounding.

SOURCE: Study of WIC Participant and Program Characteristics, 1986

Table 3. Distribution of Poverty Status for WIC Participants, Based on Reported Cash Income and Household Sizes: August to December 1984

	PERCENT OF POVERTY	PREGNANT	BREASTFEEDING	POSTPARTUM	ALL WOMEN	INFANTS	CHILDREN	TOTAL
0 - 50	34.9%	19.0%	38.4%	33.3%	32.2%	36.0%	34.4%	
51 - 100	31.8%	33.3%	45.5%	36.1%	37.3%	35.5%	36.1%	
101 - 130	18.6%	24.3%	7.8%	16.3%	14.4%	14.8%	15.0%	
0-130 Subtotal	85.3%	76.6%	91.7%	85.7%	83.9%	86.3%	85.5%	
131 - 150	7.3%	10.5%	3.5%	6.7%	7.2%	7.3%	7.1%	
151 - 185	6.7%	12.3%	4.6%	7.0%	8.0%	6.2%	6.8%	
More Than 185 *	.6%	.5%	.2%	.5%	1.1%	.2%	.5%	
TOTAL**	99.9%	99.9%	100.0%	99.9%	100.2%	100.0%	99.9%	
Median	75.5%	94.4%	61.6%	74.4%	75.7%	67.4%	71.1%	
Percent Reporting	72.1%	77.0%	82.0%	75.9%	79.4%	74.7%	76.2%	

* Probably due to annualizing rounded weekly, biweekly or monthly incomes

** Totals may not sum to 100.0 percent due to rounding.

SOURCE: Study of WIC Participant and Program Characteristics, 1986

Percent of Poverty
for WIC Participants
Based on Reported Cash Income
Aug. — Dec. 1984

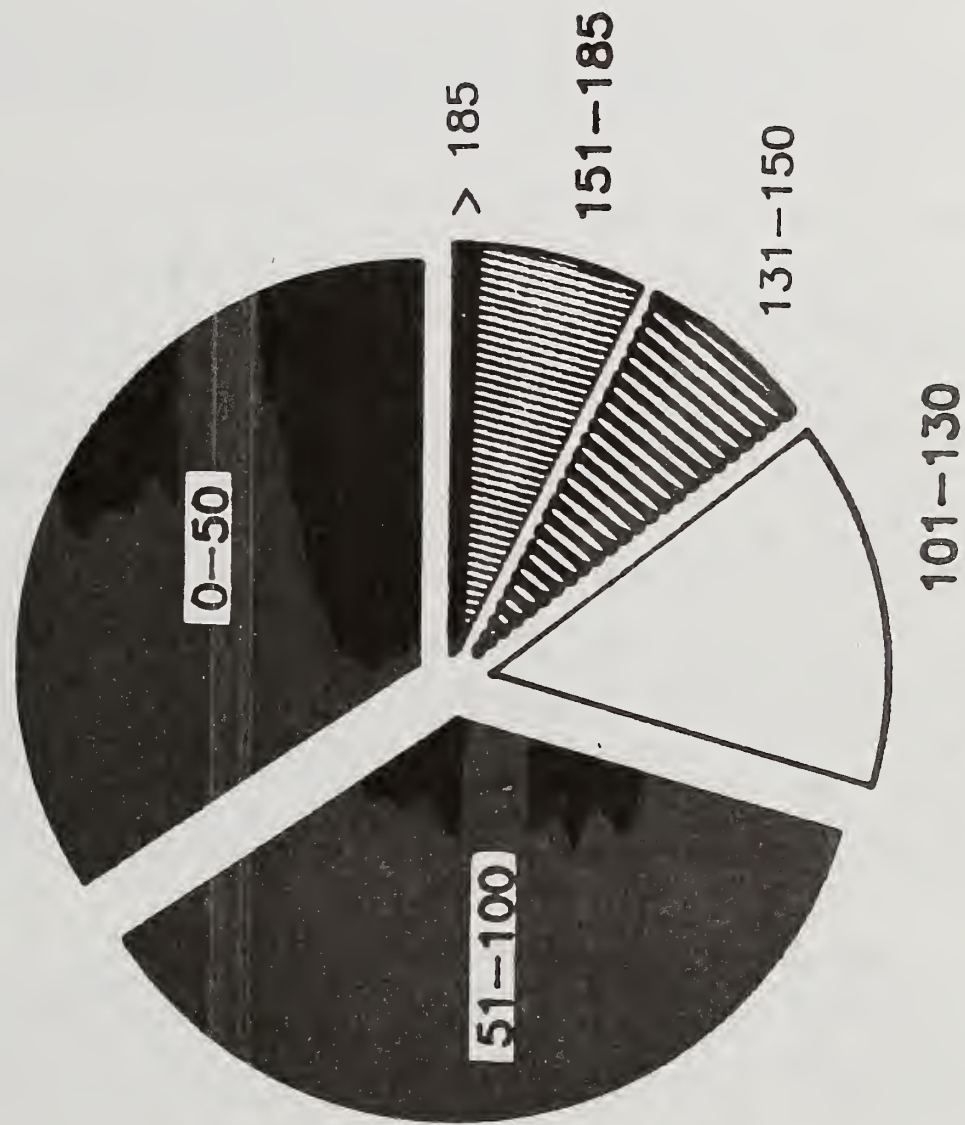


Figure 2

the basis for income eligibility in an additional 14 percent of records and such people were assumed to have incomes below 130 percent of poverty. Combining this group with the first group yielded similar results. Based on reported cash incomes, 86 percent were below 130 percent of poverty and, based on cash income or program participation, 88 percent were below 130 percent of poverty.

The mean household size was 4.1 persons. Pregnant women tended to have smaller household sizes (mean of 3.3 persons) and 3 and 4 year old children tended to have larger households (mean of 4.6 persons).

Racial Distribution

About half of the participants (48 percent) were white, a third were black (31 percent) and a sixth were Hispanic (17 percent); American Indians and Asians comprised about 2 percent each. This distribution was similar for all participant categories, except that breastfeeding women had more whites and fewer blacks and postpartum women had fewer whites and more Hispanics.

Nutritional Risks of WIC Participants

A unique aspect of the WIC Program is that in order to be eligible a person must be diagnosed as having a nutritional risk, as determined by a nutritionist, nurse, dietitian, physician, or other health professional. Federal rules establish broad guidelines for nutritional risk criteria. State and local agencies further refine these broad descriptions into specific categories of allowable risks and standards for their measurement.

There are two fundamental difficulties in interpreting the nutritional risk criteria data. First, State and local agencies do not use the same risks or the same definitions of risks. Thus, a person who is classified as at risk by one State or local agency may not be by another. Second, there are varying degrees to which risks are reported. Some certification forms have space for only one risk, some have space for many. Only one risk is necessary for eligibility, but a person may have more than one disorder. About half of the participants in the study had only one risk reported. The single risk of a person may be that person's only risk, the most important of many risks or the risk which was most readily assessed in the clinic. About half had more than one risk reported. Even for these cases, it is not clear if they constituted all the risks, the most important risks or those which were most readily identified. Whether a person has single or multiple risks may depend on the person's health status, agency policies or expediency in the clinic. The study examined the prevalence of nutritional risks in three ways: single risks reported, multiple risks reported, and combined risks, which is the frequency reported regardless of single or

multiple times. The prevalence of nutritional risks varied, depending on which method was used.

Using the combined risks, 43 percent of participants had a medical/health type risk, 38 percent had a dietary risk, and 35 percent had an anthropometric risk; other risk types were less commonly found. The most common specific nutritional risks by participant category were (based on combined risks):

<u>Pregnant Women</u>	Inadequate pregnancy weight gain History or presence of anemia Teenage pregnancy Inadequate nutrient intake High pre-pregnancy weight for height Excessive pregnancy weight gain
<u>Breastfeeding Women</u>	History or presence of anemia Mother of priority 1 infant High weight for height Inadequate nutrient intake
<u>Postpartum Women</u>	Teenage mother History or presence of anemia High weight for height Inadequate nutrient intake
<u>Infants</u>	Mother on WIC during pregnancy Inadequate nutrient intake History or presence of anemia
<u>Children</u>	History or presence of anemia Low height for age Prevention of regression Low weight for height Inadequate nutrient intake High weight for height

According to the survey of local agency staff, the most common method of assessing dietary intake was a 24 hour recall, although other methods such as food frequency checklists were sometimes used in conjunction or by themselves. To evaluate the diet, the most common method was a comparison with the Basic Four food groups.

Based on the most common standards for low hemoglobin or hematocrit values used by WIC State agencies in 1985, about 22 to 25 percent of WIC participants were anemic. Low values were somewhat more common among postpartum women, breastfeeding women and older infants. Although results for hemoglobin and hematocrit values were not identical, they showed similar trends.

Coordination with Health and Social Service Programs

An important role of the WIC Program is to function as an adjunct to health care, to help ensure that participants have

access to related obstetric and pediatric health care. Further, legislation requires coordination of WIC with social service programs, such as the Food Stamp Program.

There was substantial evidence of coordination between WIC and other health services. Two-thirds of the WIC service sites in the sample directly provided health services at the same clinic, i.e., they were co-located. Almost half provided referrals to other services. The specific services most commonly provided at the same site were immunization, well baby care, and well child care. The pattern of services provided through agreements with other providers differed a little; the most common were prenatal/obstetric services, well baby and well child care.

A majority of WIC local agencies in the sample reported routinely making referrals to the following programs: the Food Stamp Program, family planning, Aid to Families with Dependent Children and Medicaid; other programs had referrals somewhat less often.

Supplemental Food Packages

The major benefit of the WIC Program is the provision of supplemental foods, which constitutes about 80 percent of the program's cost. The WIC food packages are designed to supplement participants' diets and to be rich in certain key nutrients, such as iron, calcium, and vitamin C. Federal rules establish maximum amounts of certain types of foods and State and local agencies may adapt or "tailor" these to correspond to individual needs or to State or local nutrition policies.

Tailoring of food packages was common, although the magnitude of food package reductions was not generally large. Responses from State and local officials indicate diverse reasons for tailoring of the food package. Generally, the most common pattern of tailoring was less food for certain participant categories or age groups, e.g., less milk for 1 or 2 year old children than 3 or 4 year old children. Other common practices were a reduction in quantities of food for obese participants and other types of tailoring based on individual needs.

Examination of participant records revealed the actual food packages prescribed. Reductions in food package quantities were common: about one-quarter (27.1 percent) received maximum food packages and three-quarters did not. Maximum food packages were most common for infants under four months old (76.5 percent), breastfeeding women (46.1 percent) and pregnant women (36.6 percent). Maximum food packages were least common among children, especially one-year olds (11.6 percent) and 4 to 12 month old infants (12.9 percent).

Items most commonly tailored were milk and milk products. About two-thirds of women and children (63 percent) received less than the full quantities allowable. Even so, the mean quantities

of milk products issued were generally around 90 percent of the maximum permissible (28 quarts for pregnant and breastfeeding women and 24 quarts for children and postpartum women). For the other food package items, the maximum quantities were provided for a majority of participants. Table 4 shows the maximum allowable and mean quantities prescribed for the WIC food package.

Table 4. WIC Food Packages - Maximum Allowable and Mean Amounts of Food Prescribed Per Month by Category: August to December 1984

FOOD TYPE	-----WOMEN-----			-----INFANTS-----		CHILDREN
	PREGNANT	BREASTFEEDING	POSTPARTUM	0-3 MO.	4-12 MO.	
<u>MILK AND MILK PRODUCTS</u> (in quart equivalents)						
Maximum	28.0	28.0	24.0	N/A	N/A	24.0
Mean	26.2	26.6	20.9	N/A	N/A	20.8
<u>CHEESE (INCLUDED IN MILK AND MILK PRODUCTS ABOVE)</u> (in pounds)						
Maximum	4.0	4.0	4.0	N/A	N/A	4.0
Mean	1.9	2.1	1.6	N/A	N/A	1.4
<u>EGGS</u> (in dozens)						
Maximum	2 - 2.5	2 - 2.5	2 - 2.5	N/A	N/A	2 - 2.5
Mean	2.1	2.0	1.9	N/A	N/A	1.9
<u>JUICE WITH VITAMIN C</u> (in single strength ounce equivalents)						
Maximum	288.0	288.0	192.0	N/A	92.0	288.0
Mean	259.6	259.8	177.6	N/A	81.7	229.6
<u>INFANT FORMULA, USUALLY IRON-FORTIFIED</u> (in single strength equiv. ounces)						
Maximum	N/A	N/A	N/A	806.0	806.0	N/A
Mean	.8	.4	.0	743.8	710.2	13.9
<u>IRON-FORTIFIED CEREAL</u> (in ounces)						
Maximum	36.0	36.0	36.0	N/A	24.0	36.0
Mean	33.3	33.4	31.1	N/A	20.0	30.9
<u>PEANUT BUTTER/DRIED BEANS OR PEAS</u> (in ounces)						
Maximum	16 - 18	16 - 18	N/A	N/A	N/A	16 - 18
Mean	12.0	13.0	N/A	N/A	N/A	10.9
NOTE: Formula is available for women or children with special needs. Infants 4 to 12 months receive fortified infant cereal and infant or adult juice.						

SOURCE: Study of WIC Participant and Program Characteristics, 1986

SECTION I. OVERVIEW



CHAPTER 1

INTRODUCTION

The Special Supplemental Food Program for Women, Infants and Children, known as the WIC Program, is a Federal nutrition assistance program which provides supplemental foods, nutrition education and access to health services to low-income pregnant, breastfeeding and postpartum women, infants and children up to their fifth birthday who are at nutritional risk. Goals of the WIC Program include improving the nutritional and health status of needy women and children at a period critical in their development, thereby reducing nutrition-related health problems of pregnancy, infancy and childhood. This study provides nationally representative data on the characteristics of WIC participants and State and local agency programs that operate WIC. A companion report, Report on WIC Nutrition Education Services, derives from the same data base and focuses on nutrition education services in the WIC Program.

The WIC Program originated as a two-year pilot project, authorized in September, 1972 as an amendment to the Child Nutrition Act of 1966. Since then, the program has grown considerably, and there have been modest changes in the program design. Table 1.0.1 summarizes the historical trends in participation and funding for the WIC Program, from Fiscal Year 1974 through Fiscal Year 1984. In Fiscal Year 1985, \$1.5 billion was appropriated for program services, in addition to funds unspent from the prior year. Monthly participation averaged slightly above 3.1 million from October, 1984 to April, 1985.

At the Federal level, the program is administered by the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA). There is a National Office in Alexandria, Virginia and seven Regional Offices. FNS provides grants-in-aid to State agencies to administer the program. Approximately 80 percent of the funds are available for food benefits and 20 percent for program services and administration. There are 88 State agencies, which include health departments of the 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam. In addition, 34 American Indian or Native American tribes or tribal associations operate as State agencies. In turn, State agencies provide funds to about 1,600 local agencies to administer approximately 7,500 clinics or service sites that actually certify and provide services to participants. Federal legislation and regulations established a general framework for administration of the program. These are further specified by State-developed Plans of Operation and Procedure Manuals. The WIC Program was designed to serve as an adjunct to health care services and, thus, has a great diversity in local operational practices, partially attributable to the variation in local health services.

1.1 Program Eligibility

Federal regulations established three primary eligibility criteria which must be met before an individual can participate in WIC.

- Category. A person must be either:
 - a pregnant women (may be certified through pregnancy until six weeks after the end of pregnancy),

TABLE 1.0.1

WIC PROGRAM PARTICIPATION AND COST*

FISCAL YEARS	AVERAGE MONTHLY PARTICIPATION				FEDERAL EXPENDITURES			AVERAGE FOOD BENEFIT PER PERSON
	WOMEN	INFANTS	CHILDREN	TOTAL	FOOD	ADMIN	TOTAL	
	-----THOUSANDS-----				-----MILLIONS (\$)-----			-----DOLLARS-----
1974**	17	26	44	88	8.2	2.2	10.4	15.68
1975**	55	103	186	344	76.6	12.6	89.3	18.58
1976**	81	148	291	520	122.3	20.3	142.6	19.60
TQ**	107	151	361	620	37.0	7.4	44.4	19.88
1977	165	213	471	848	211.7	44.2	255.9	20.80
1978	240	308	633	1,181	311.5	68.1	379.6	21.99
1979	312	389	782	1,483	428.6	96.8	525.4	24.09
1980	411	507	995	1,903	584.1	123.8	707.9	25.48
1981	445	585	1,088	2,118	708.0	180.0	888.0	27.86
1982	477	623	1,088	2,189	756.2	191.8	948.0	28.78
1983	542	730	1,265	2,537	901.8	221.7	1,123.4	29.62
1984	657	825	1,563	3,045	1,117.3	268.7	1,386.0	30.58

* From FNS program records.

** From 1974 to 1976, the Federal Fiscal year was July 1 to June 30. July 1, 1976 to September 20, 1977 was the Transition Quarter (TQ). Since then, the Federal Fiscal Year has been October 1 to September 30.

- a breastfeeding women (may be certified until one year after delivery),
 - a postpartum women (may be certified until six months after the end of pregnancy, unless extended by breastfeeding),
 - an infant (may be certified until the first birthday) or,
 - a child (may be certified from the first birthday until the fifth birthday).
- Low income. The applicant's household income must be below applicable income eligibility criteria. The maximum WIC income standard is 185 percent of the Federal poverty standard (i.e., \$18,870 for a family of four for the period July 1, 1984 to June 30, 1985). State (or local) agencies may establish lower income standards corresponding to free or reduced price health care income standards, provided they are not less than 100 percent of poverty. Generally, income is defined as cash income and includes wages, unemployment compensation or cash welfare, but not in-kind benefits such as Food Stamps or the value of school lunches or medical care.
 - Nutrition risk. An individual must have at least one nutritional risk as as determined by a competent professional authority (such as a nutritionist, dietitian, nurse, or physician). The types of nutritional risk specified in the legislation include (1) detrimental or abnormal nutritional conditions detectable by biochemical or anthropometric measurements, such as anemia, inadequate pregnancy weight gain, or low weight-for-height; (2) other documented nutrition related medical conditions, such as toxemia; (3) dietary deficiencies that impair or endanger health; or (4) conditions that predispose people to inadequate nutritional patterns or related medical problems, such as a history of high risk pregnancies.

At the time of the survey, a State or local agency could establish an optional residency requirement, though not of a durational nature. (New regulations, dated February 13, 1985, require residency requirements to be established.) A person cannot participate in more than one WIC Program at a time or in the comparable Commodity Supplemental Food Program while on WIC.

The WIC Program is not an entitlement program, and caseloads are limited. People may participate only to the extent that funds are available to serve them. Based on the Bureau of the Census' Current Population Survey, it was estimated that more than 10 million people were income-eligible to participate in WIC in 1983. However, this estimate did not include adjustments for nutritional risk criteria, which would have reduced the estimated number of eligible people. Due to this limitation, Federal policy specifies a nutritional risk priority system which is used to select participants when a local agency has reached its maximum caseload level. The priority system is designed to target benefits to those most vulnerable and in need of benefits when funding is not sufficient to serve all eligible applicants.

Federal regulations at the time of this study specified six priority groups described as follows:

- Priority I. Pregnant women, breastfeeding women and infants at nutritional risk as demonstrated by hematological or anthropometric measurements, or other documented nutritionally related medical conditions which demonstrate the person's need for supplemental foods.
- Priority II. Except those infants who qualify for Priority I, infants (up to six months of age) of WIC participants who participated during pregnancy, and infants born of women who were not WIC participants during pregnancy but whose medical records document that they were at nutritional risk during pregnancy due to nutritional conditions detectable by biochemical or anthropometric measurements or other documented nutritionally related medical conditions which demonstrate the person's need for supplemental food.
- Priority III. Children at nutritional risk as demonstrated by hematological or anthropometric measurements or other documented medical conditions which demonstrate the child's need for supplemental foods.
- Priority IV. Pregnant women, breastfeeding women, and infants at nutritional risk due to an inadequate dietary pattern.
- Priority V. Children at nutritional risk due to an inadequate dietary pattern.
- Priority VI. Postpartum women at nutritional risk.

The new regulations (February 13, 1985), not in effect at the time of this study, have slightly modified the priority system to permit greater State or local discretion. The new regulations permit State agencies to assign high-risk postpartum women to a higher priority level from III to V. They also permit establishment of an optional Priority VII to be reserved for previously certified participants with no current problems but who may regress in nutritional or health status without continued availability of benefits.

In determining nutritional risk, the competent professional authority must have at least the following information available on the applicant: height (or length for an infant), weight, and a blood test for anemia, such as hemoglobin or hematocrit. However, hematological tests are not required for infants under six months of age or for children if they were normal at their last certification. Frequently, nutritional risk determinations include examination of a person's medical history and/or a dietary assessment, such as a 24-hour recall or a food frequency questionnaire. At least one nutritional risk used in determining eligibility must be noted in the participant's certification record.

Generally, participants are certified to participate for six months and then must be certified again based on the above criteria if they are to continue to receive benefits. However, pregnant women are certified continuously through six weeks postpartum, regardless of the total time span. Under new regulations (not in effect at the time of the study), States may permit infants to be certified for up to one year without recertification.

1.2 Program Benefits

There are three classes of benefits provided to program participants.

- Supplemental foods. These are monthly food packages provided free to participants designed to supplement their diets with food high in commonly lacking nutrients. The food packages vary with the type of participants (e.g., infants get foods different from pregnant women), and there are six general types of food packages. The Federal guidelines for maximum WIC food packages are shown in Table 1.2.1. State or local agencies may choose to tailor the food packages to more closely meet the needs of participants, based on their nutrition policies. For example, an overweight child may be prohibited from receiving peanut butter because of its high caloric density or may be advised to use skim milk. During Fiscal Year 1984, the average monthly cost of a food package was \$30.58 per participant, with considerable variation attributed to the type of food package, State nutrition policies, and so forth.
- Nutrition education. Nutrition education is provided by local health or nutrition professionals to assist participants and their families in improving their dietary practices, to help them utilize the supplemental foods, and to improve their normal diets. Participants must be offered at least two nutrition education sessions per certification period but are not required to attend as a condition for receiving their food packages. As mentioned earlier, a companion report focuses on WIC nutrition education services and, therefore, this report provides minimal description of this aspect of WIC.
- Access to health services. In order to function as an integrated health/nutrition intervention program, WIC serves as an adjunct to other health services, especially obstetric, gynecological and pediatric care. This is provided in a variety of ways. In sites located at local health clinics, the WIC program may be highly integrated as a portion of maternal and child health care services. Alternatively, WIC routinely may help set appointments for appropriate health or medical services. Since WIC participants often have to come in to pick up their monthly food vouchers, this may serve as an incentive for participants to receive health services. In sites that are less directly connected with health services, WIC provides referrals to local health care providers.

1.3 Food Delivery System

A central aspect of the WIC Program is the way it provides supplemental foods to participants. There are three principal food delivery systems which vary from State to State.

- Retail purchase system. In this, the most common system, participants receive monthly vouchers or checks (generically called food instruments). These can be taken to approved local food stores, and the participant can select the food (from the approved list) and use the vouchers or checks to redeem them at no charge. In turn, the food store is reimbursed by the State agency.
- Home delivery systems. WIC foods are delivered directly to the participant's home by a local dairy or other vendor for this system. Home delivery vendors are under contract to the local or State agency and are reimbursed, usually based on a bid price.

TABLE 1.2.1

MAXIMUM FEDERAL GUIDELINES FOR MONTHLY WIC FOOD
PACKAGES

FOOD PACKAGE TYPES AND CONTENTS	QUANTITY
I. <u>Infants 0 - 3 months</u> Iron-fortified infant formula ^a	806 oz.*
II. <u>Infants 4 - 12 months</u> Iron-fortified infant formula ^a Iron-fortified infant cereal Juice with vitamin C ^b	806 oz.* 24 oz. 96 oz.*
III. <u>Children or Women with Special Dietary Needs</u> Special formula ^c Iron-fortified cereal Juice with vitamin C ^b	806 oz.* 36 oz. 144 oz.*
IV. <u>Children 1 - 5 Years Old</u> Milk or cheese ^d Eggs ^e Iron-fortified cereal Juice with vitamin C ^b Peanut butter (or dried beans or peas)	24 qt. 2 or 2.5 doz. 36 oz. 288 oz.* 18 oz. 16 oz.
V. <u>Pregnant and Breastfeeding Women</u> Milk or cheese ^d Eggs ^e Iron-fortified cereal Juice with vitamin C ^b Peanut butter (or dried beans or peas)	28 qt. 2 or 2.5 doz. 36 oz. 288 oz.* 18 oz. 16 oz.
VI. <u>Postpartum (Non-breastfeeding) Women</u> Milk or cheese ^d Eggs ^e Iron-fortified cereal Juice with vitamin C ^b	24 qt. 2 or 2.5 doz. 36 oz. 192 oz.*

* Single strength equivalent volume.

^a Alternate formulas may be provided under physician's prescription. Liquid concentrate is normally provided, but equivalent amounts of ready-to-feed or powdered formula are permissible.

^b Juice may be single strength or its equivalent in frozen concentrate. For infants, 63 oz. of infant juice may be substituted.

^c 104 oz. of additional formula may be provided based on documented needs of the individual.

^d Specified cheeses (e.g., processed American, cheddar, et cetera) may be substituted for milk at the rate of 1 lb. of cheese for 3 qt. of fluid milk. The maximum quantity of cheese is 4 lb., with exceptions for lactose intolerance. Evaporated or dried milk may be substituted for milk at equivalent levels.

^e Dried eggs may be substituted for fresh eggs.

- Direct distribution system. The least common system is direct distribution. WIC foods are purchased directly on a wholesale basis by the State or local agency which maintains them in local warehouses. Participants then come to a distribution center and take the food home themselves when this system of distribution is used.

1.4 The Context of This Study

The purpose of this study was to provide a national data base of the descriptive characteristics of WIC participants and programs. There was a paucity of recent data to accurately describe the WIC Program. FNS perceived this gap in information and initiated this study, which subsequently was awarded to Ebon Research Systems of Washington, D.C., and its subcontractor, Abt Associates, Inc., of Cambridge, Massachusetts.

FNS received minimal information about WIC participants on a routine basis. Monthly participation and financial status reports provided State counts of participants reported by women, infants and children. Annual reports have required local agency counts of women, infants, and children by race; and regulations from February, 1985 also required semi-annual State estimates of participants by category (including counts of pregnant, breastfeeding and postpartum women) and priority level.

The only previous national survey of WIC participant characteristics was conducted by FNS in 1977, the WIC Participant Profile Survey. This was a much less comprehensive survey and used a very different methodology than the current study. It surveyed 1,576 participants in 97 clinics (versus 6,444 participants in 356 clinics in the current survey). Because of the substantial methodological differences between the two efforts, comparisons between the two studies are not likely to be valid. Many differences may be as much attributable to methodological differences as to changes in the nature of the WIC population.

Disparate sources of information provide some additional insight into characteristics of WIC participants, but not in sufficient detail or quality to provide a nationally representative profile. For example, the Centers for Disease Control (CDC) operates a National Nutrition Surveillance Program (in cooperation with State and local WIC or health programs) that provides some anthropometric and hematological data on infants and children and pregnancy outcome-related data on pregnant women. However, the data are self-reported by agencies and are not nationally representative. One potential use of the current survey data is to compare it to the CDC data to assess the extent of commonality and difference between the nationally representative WIC data and the extensive, but not nationally representative, CDC data.

Many individual States possess the capability to review their certification forms to assess the characteristics of participants on a State level. This is particularly the case if their certification records are computerized at the State level. But since not all States possess this capability, a nationally representative sample is not readily attained. Further, since the certification forms and, in some cases, definitions of variables are not standardized nationally, the data may not be consistent. Yet, State surveys still are useful in understanding characteristics of the State in question. Two such studies include the California Department of

Health Services Retrospective Study of the Special Supplemental Food Program for Women, Infants and Children (April, 1982) and Reasons for Enrollment in the Michigan WIC Program by the Michigan Department of Public Health (1982).

Finally, the National WIC Evaluation provides an invaluable data base of a nationally representative sample of pregnant women on WIC in 1983. However, it is representative only for that group of participants. Children of women in the sample also were studied, but they were not representative of all WIC children. Further, the design prevented collection of some pertinent administrative information, such as reason for certification and food package contents.

After this careful examination of types of data available, FNS elected to undertake this study to examine general parameters of the program. It focused primarily on critical elements of program design: program operations and participant characteristics in term of certification of eligibility (category, income status, nutritional risk) and program benefits (supplemental foods, nutrition education and relation to health services). It is not an evaluation and is not intended to examine the effectiveness of WIC intervention. It is a snapshot of the WIC Program in late 1984.

The data collected are of two primary types. First, agency information on State and local agency characteristics and policies were derived from responses to mail surveys to nationally representative samples of State and local WIC Program officials. Second, participant characteristics were based on review of records of a nationally representative sample of participants. This review was conducted by abstracting records in the field using trained data collectors. Selection of this approach ensured consistency of the data with administrative records for the variables of interest, and assured a nationally representative data base.

The primary outcome of this national data collection effort is a data base containing a wide variety of characteristics of WIC programs and participants, which is maintained at the Washington Computer Center. This report contains a preliminary investigation of the data, and it is expected that FNS and other interested users will use this data base to conduct other analyses as needed in the future.

1.5 Organization of the Report

This report, Study of WIC Program and Participant Characteristics, is organized into three major sections. Section I, Overview, describes the background for the WIC program and the study and the study's methodology. Section II, WIC Program Agency Characteristics, summarizes characteristics of State and local agency WIC programs. The State and local agency programs are described together since much of the information derived from the surveys was parallel in nature (e.g., State and local policies on tailoring of food packages). Section III, WIC Participant Characteristics, describes WIC participant demographic, certification and food package characteristics.

CHAPTER 2 METHODOLOGY

Overview

This chapter describes the methodology of the study, including sampling of agencies and participants' records; data collection; and analysis methods. It also compares study data with comparable data from FNS program reports.

During preliminary stages of the study, research questions were clarified, variables were identified and defined, and data availability and quality were assessed all prior to final selection of the study variables. Multi-level instrumentation was developed for data collection through mail surveys and abstraction of information from WIC participant records. These methods ensured cost-effective collection of the most accurate data possible.

Sampling of State and local agencies was accomplished with probability of selection being proportionate to size. The 48 contiguous States constituted the sampling frame. Local agencies providing direct WIC services to clients were included in the study as service sites, and one other service site of the agency was selected at random if there was more than one. Participants were stratified by category (pregnant women, breastfeeding women, postpartum nonbreastfeeding women, infants, and children), and 32 - 34 individuals per local agency were selected at random (or half from each of two service sites). A total of 28 State agencies (26 geographic states and 2 State Indian agencies), 208 local agencies, 356 service sites and 6,444 individuals were included in the study, and approximately 10 percent of all participant records were re-abstracted as a quality control measure.

Seven types of data collection instruments were utilized. All data for State and local agencies were obtained from mail surveys. Participant level data were collected from WIC certification records and abstracted onto Participant Record Review forms. Data collectors and field supervisors received extensive training in data collection and recording methods, data identification and quality control, and field protocols prior to on-site visits. Data collection at local agencies consisted of orientations with WIC personnel, clarification of responses to mail surveys, and abstraction of data from participant records and files.

Tallies of participant records pulled at random helped determine estimates of the proportion of participants by category.

Data were cleaned, dual entered key-to-disk, checked for errors, corrected and uploaded to a mainframe computer where further logic and range checks were conducted. Data files were corrected when necessary. Ten data files were created, one for each type of mail survey - State baseline and update surveys, local agency and service site surveys, and a nutrition education survey, and one for each of the five participant categories. Before analysis, participant data were weighted based on the the inverse probability of selection to achieve national estimates of the WIC population.

Data quality was variable depending on the level of reporting. Participation data were best for total participants, total women, infants, and children and poorest for children by year of age.

Codebooks were prepared and analyses conducted with a mainframe statistical package, SPSS Version 9. State and local agency analyses were based on unweighted data, frequency distributions with associated statistics were produced. Analyses at the participant level were based on weighted data.

Comparisons of weighted study data with FNS program data on category, race and priority level generally indicate similarity of results (within 1 percent). This lends confidence to the national representativeness and accuracy of these study findings.

2.1 Sampling

The sampling plan entailed four stages with complete clustering at all levels -- the selection of state, local agencies, service sites, and WIC participants. The primary sampling unit was the State agency with subsampling from local agencies within states, from service sites within local agencies, and from participants within service sites. In addition, participants were stratified into eight groups: pregnant women, breastfeeding mothers, non-breastfeeding mothers, infants, one-year old children, two-year old children, three-year old children, and four-year old children (years being rounded down in the conventional manner; e.g., one-year olds are from 13 through 24 months of age).

The sampling frame for States consisted of 48 States and the District of Columbia, but excluding, for practical reasons, Alaska, Hawaii, and all territories and possessions. The conterminous U.S. includes 95 percent of all WIC participants (Puerto Rico was the largest area excluded); therefore the strategy essentially constituted a nationally representative survey sample. Included within some of the States were small, independently operating Indian State agencies. For the purpose of this study, Indian agencies were sampled as local agencies. The sampling frame for local agencies comprised the WIC agencies within states, of which there were approximately 1,600 at the end of FY 1982; however, only the local agencies within sampled States were of interest.

At the State and local agency levels, probability proportionate to size sampling methods were applied. Sampling proportions determined from FY 1982 counts of women, infants, and children were utilized so that the probability of a State or local agency being selected was directly proportional to WIC participant caseload (i.e., those State and local agencies serving the largest number of participants had the greatest probability of being selected). Twenty-eight State WIC agencies (26 geographic States and 2 Indian State agencies) and 208 local agencies (the 16 service sites in Louisiana were counted as separate local agencies) were included in the study. Refer to Table 2.1.1 for the distribution of sampled States by region, and the number of local agencies selected per State. All seven regions of the U.S. were represented, though more states were selected from the Southeast and Midwest regions.

Regarding the sampling of service sites, if the number of sites was one or two at a given local agency all sites were used; whereas, if more than two service sites existed, the local agency automatically was selected as one site (if it provided WIC services), and a second site was randomly selected from the others. If the local agency did not provide WIC services, a service site of the agency was selected at random instead. A total of 356 service sites were included in the study.

Finally, participants were selected at random from each participant category, selecting approximately 32 - 34 participants at each of 208 local agencies (16 - 17 at each of two service sites of a given agency). The breakdown of the number of participants sampled per category is presented in Table 2.1.2.

It should be noted from Table 2.1.2 that there was a large excess of postpartum records compared to the number expected. The reason was that extra postpartum records were abstracted to ensure an adequate sample size

TABLE 2.1.1
SAMPLED STATES AND NUMBER OF LOCAL AGENCIES BY REGION

STATES BY REGION	NUMBER OF LOCAL AGENCIES
<u>Region 1: Northeast Region</u>	
Massachusetts	4
New York	22
Rhode Island	1
<u>Region 2: Mid-Atlantic Region</u>	
Maryland	5
New Jersey	6
Pennsylvania	12
Virginia	6
<u>Region 3: Southeast Region</u>	
Alabama	6
Florida	7
Georgia	7
Mississippi	8
North Carolina	9
Tennessee	6
<u>Region 4: Midwest Region</u>	
Illinois	11
Indiana	5
Michigan	8
Minnesota	5
Ohio	13
<u>Region 5: Mountain Plains Region</u>	
Kansas	2
Missouri	6
Utah	2
<u>Region 6: Southwest Region</u>	
Louisiana	16**
Oklahoma	3
Texas	14
WCD Enterprises, Oklahoma*	1
<u>Region 7: Western Region Region</u>	
Arizona State	3
Arizona - Navajo*	1
California	19
TOTAL	208**

* WCD Enterprises in Oklahoma and the Navaho Nation WIC in Arizona are State Indian WIC agencies.

** In Louisiana, the State agency directly administers all service site operations, and, thus, acts as both a State and local agency. Eight local agencies with 16 service sites were to be selected, so they are represented here as 16 local agencies which were independently selected to be equivalent to sampling 16 service sites one in each of 16 independent areas.

TABLE 2.1.2
NUMBER OF PARTICIPANTS SAMPLED PER PARTICIPANT CATEGORY

CATEGORY	FILES ABSTRACTED	FILES EXPECTED FOR ABSTRACTION	APPROXIMATE FILES ABSTRACTED PER SITE*	ABSTRACTION EXCESS/(SHORTAGE)	
				NUMBER	PERCENT
Pregnant	1,181	1,200	3	(19)	(1.6%)
Breastfeeding	761	800	2	(39)	(4.9%)
Postpartum**	582	400	2	182	45.5%
Infants	793	800	2	(7)	(0.9%)
Age 1	779§	800	2	(21)	(2.6%)
Age 2	785	800	2	(15)	(1.9%)
Age 3	792	800	2	(8)	(1.0%)
Age 4	771	800	2	(29)	(3.6%)
Total	6,444	6,400	17**	76§§	1.2%§§

* If only one service site, the number abstracted per category was double.

**At the initial sites only one postpartum woman was abstracted, but the number was increased to two after the study got underway. Thus, the number abstracted per service site increased from 16 to 17, and the number per local agency went from 32 to 34.

§In addition there were 32 one-year-olds still certified as infants. For all analyses, however, these 32 cases were eliminated due to the lack of consistency regarding the contents of the participants' WIC records. Thus, the 32 additional one-year-olds were sampled but not used; total files abstracted were 6,476, though only 6,444 were used.

§§Total percent represents total abstracted versus total expected for abstraction and does not represent the aggregate excess/(shortage) across individual participant categories.

for this category, since after 20 percent of the local agencies were sampled it was apparent that many agencies served no postpartum women. This would have resulted in a postpartum sample size that would have been too small for statistical analysis. Therefore, the number sampled was increased from 1 to 2 to ensure adequate sample size. Shortages in other categories, primarily in other categories, primarily breastfeeding women (4.9 percent shortage) and children age four (3.6 percent shortage), that would have brought the final total down, were more than compensated for by the extra postpartums.

In order to sample participants, participant files were selected at random from file cabinets. First, all file drawers were randomized with the starting drawer being the first random drawer. An estimate of the participant caseload at the site then was divided by 25 (at each of two service sites) or by 50 (if only one service site) to obtain the sampling interval (n). A random start point was selected up to the interval number, then every nth chart was pulled until the quotas in each participant category were filled (see third data column of Table 2.1.2) or until at least 200 files were examined per service site (400 if only one service site). Tallies of participant categories for all charts pulled (the minimum being 100 per service site) were made in order to obtain estimates of the proportion of participants by category. In approximately 8 percent of the agencies; files could not be sampled directly for various reasons. For those agencies, list sampling was conducted in a similar manner, utilizing the most recent list of active participants.

In some instances local agencies required permission from their WIC participants before their records could be examined (2.4 percent of all agencies). In such cases a triple sample of participants was drawn from lists, and consent forms were sent to each agency for distribution to participants over a one month period as they came in to pick up their food instruments. The triple sample ensured that enough consent forms would be signed to allow the requisite number of records to be abstracted.

As a quality control measure, 622 records (9.6 percent of the total sample) were reabstracted. Error rates were calculated by comparing reabstracted records to the original abstracted records.

Table 2.1.3 compares the sample to the total WIC population for each sampling level, and the sampling method at each level is described.

2.2 Data Collection Instruments

Seven types of data collection instruments were developed for this study:

(1) State Agency Baseline Survey

This questionnaire gathered aggregate descriptive data on WIC participation patterns and program operations within each state. The survey was conducted through a self-administered questionnaire mailed in June, 1984 to each of the 28 agency directors of states selected for the sample. The response rate to this survey was 100 percent.

(2) State Agency Update Survey

A State Agency Update Survey was conducted by mail in late October, 1984 to obtain Fiscal Year 1984 data to supplement information collected by the

TABLE 2.1.3

SAMPLE DISTRIBUTION BY STATE, LOCAL AGENCY, SERVICE SITE, AND PARTICIPANT CATEGORY

LEVEL	UNIVERSE (NUMBER)	SAMPLE (NUMBER)	METHOD
1 State	49	28	Proportional random sampling
2 Local Agency	1,587*	208**	Proportional random sampling
3 Service Site	7,000*	356	Directed selection and random sampling§
4 Participant Categories	3,079,850§§	6,444	Stratified random sampling§§§

* These numbers are approximations.

** The 16 service sites in Louisiana were counted each as a separate local agency, bringing the total to 208.

§ If 2 or less service sites, all were taken; if more than 2, the local agency was selected if it provided services, and 1 additional site was selected at random from among those that remained.

§§ Based on September, 1984 FNS participation records.

§§§ Stratification was conducted by taking 6 pregnant women, 4 breastfeeding women, 2 - 4 postpartum non-breastfeeding women, 4 infants, 4 one-year-olds, 4 two-year-olds, 4 three-year-olds, and 4 four-year-olds.

State Agency Baseline Survey for Fiscal Year 1983. The response rate to this survey was 92.9 percent.

(3) Service Site Survey

This instrument was sent to local agency directors to obtain information about their sampled service sites to aid in data collection. This short survey provided information needed in scheduling site visits in tailoring the data collector training sessions. Responses from 99.4 percent of the agencies were obtained.

(4) Local Agency Survey

The local agency survey was conducted through means of a self-administered questionnaire mailed in June, 1984 to local agency WIC directors. The survey gathered detailed information on participation patterns and program operations at the local agency as of April, 1984. Agency directors were asked to respond to questions for each of the sampled service sites within their agencies.

Data collectors obtained clarification of items during their site visits regarding any problems or questions that arose during the quality control review of the completed instruments. The response rate to this instrument was 100 percent with 204 of 208 agencies providing complete surveys, and four agencies provided participation information only.

(5) Nutrition Education Survey

Another survey instrument was utilized to collect information about nutrition education activities. This instrument was mailed to each local agency in June, 1984 and was completed by nutrition education coordinators at each service site. Reported were goals and objectives for nutrition education, topics, promotion and support of breastfeeding, policies for nutrition education contacts, curricula, educational materials, inservice training and technical assistance, educational methods, general program characteristics, and background of nutrition education providers. The response rate was 94.7 percent. During site visits, field data collectors resolved problems regarding data errors and other problems. Results of this survey appear in Part II of this report.

(6) Participant Record Review

Because data varied slightly for different categories of participants, separate data abstraction forms were developed for:

- (1) Pregnant Women
- (2) Breastfeeding Women
- (3) Nonbreastfeeding, Postpartum Women
- (4) Infants
- (5) Children

Although many variables were the same across participant categories (e.g., income, birthdate, certification), several were unique (e.g., infant birthweight, expected delivery date). Data were recorded on these forms from participant records at the agency sites. Over 6,400 participant Record Review forms were completed.

(7) Nutrition Education Mailing Tally

For those agencies that mailed nutrition education material to their participants, a simple tally was recorded of the frequency with which materials were mailed. Mailings were recorded between mid-August and mid-October, 1984. Responses were obtained from 77.2 percent of the service sites; however, since only 3 percent of these sites conducted any mailing of materials, the information was not useful.

2.3 Data Collection

Training

Three extensive training sessions were held to prepare 43 data collectors and 9 field supervisors for sampling and data extraction. The training sessions were formatted to provide both generalized instruction (techniques to be used by all data collectors) and individualized instruction (for the state(s) each person would be visiting).

Data collectors and supervisors received specific training and practice in sampling methods. Detailed instruction was provided for each variable to be collected, including definition, potential pitfalls, checking data validity and quality, data locations, and mechanisms for recording information on the Participant Record Review forms.

Exercises in abstraction techniques were completed in group and individualized sessions. All data collectors and supervisors were tested at the end of each training session to ensure competency and accuracy in data abstraction and reporting. All collectors were advised as to the proper protocol and procedures to use during site visits.

On-Site Data Collection

Site visits were conducted at 356 service sites of 208 local WIC agencies. Data collection activities were conducted by the 43 data collectors from late August through early December, 1984, with most sites completed by the end of October. Nine field supervisors provided periodic on-site supervision, in-service training, and quality control for all abstracted data.

Data collectors abstracted data from more than 6,400 participant records, approximately 32 - 34 per local agency. Supervisors reabstracted 10 percent of these as a quality control measure. Discrepancies between original abstractions and re-abstractions were corrected on site, with data collectors receiving in-service training to correct procedures, if necessary.

Data collectors conducted brief on-site orientations with the local agency WIC director or his/her designee and the nutrition education coordinator. They obtained clarification of data as required from the earlier mail surveys, made contact with a person assigned to respond to data collection questions, sampled the requisite number of participant files, and abstracted the required data from each. A week was allotted for each local agency, but most data were collected within four days.

Completed abstraction instruments and corrected mail surveys were mailed weekly by data collectors to the appropriate field supervisor who examined the materials for errors and omissions. Satisfactory material then was forwarded to Ebon where an additional review of the materials was made. Any problems found were resolved by the data collector in the field.

2.4 Data Processing

After data were cleaned, they were entered key-to-disk on IBM PC compatible computers. Data were entered twice (once by each of two data entry personnel); a computer program was written and used to compare both sets of entered data and identify entry discrepancies. Where a problem was found, the original data abstraction form was consulted and data were corrected. The corrected data set was uploaded onto a UNIVAC 1100/80 mainframe where additional data range and logic checks were conducted prior to analyses. Any discrepancies were identified, and source documents were consulted to correct the data.

Ten separate data files were created as follows:

- (1) State Agency Baseline Survey
- (2) State Agency Update Survey
- (3) Service Site Survey
- (4) Local Agency Survey
- (5) Nutrition Education Coordinator Surveys (for each of the 2 sites)
- (6) Pregnant Women Participant Record Review
- (7) Breastfeeding Women Participant Record Review
- (8) Postpartum, Non-breastfeeding Women Participant Record Review
- (9) Infants Participant Record Review
- (10) Children Participant Record Review

2.5 Data Quality

Several steps were taken from the point of data collection through processing, compilation, and data analysis to ensure data quality and provide estimates of error rates and comparability. Mailed questionnaires contained definitions of terms which might have been interpreted differently at various locations, and clarifications and instructions were used to increase the probability of accurate responses.

Participation data varied in quality based on the level of reporting. Because FNS requires reporting of the number of women (as a group), infants and children, State and local agencies routinely compiled these data. The most complete data were for the total number of participants for State and local agencies followed by data for total women, infants, and children. Data quality was poorer as the level of specificity by participant category increased. That is, data on children by year of age usually were not available and were of poorer quality than that for total children. Similarly, data on participation for pregnant, breastfeeding and postpartum women were not as available and not of as high quality as that for total women.

Quality of participation data is summarized as follows (descending order of quality):

Best Quality	Total Participants
	Women, Infants, Children
	Pregnant, Breastfeeding, Postpartum Women
Poorest Quality	Children Age, 1,2,3,4

2.6 Weighting

Before data analysis could begin, data were weighted to obtain estimates of the national WIC population. The weighting procedure was based on the inverse probability of selecting a particular individual. Computations to determine this exactly would have been very costly and time consuming, so estimates were made by drawing 1,000 random samples of State and local agencies and determining the proportion of time the sampled State and local agencies were selected. This 1,000 random draw was repeated for State agencies to verify the accuracy of the method (the results were the same both times).

At the service site level, the probability of selecting each local agency as a service site was 1.0. However, 58 local agencies (28.4 percent) were administrative units that did not supply WIC services. The probability of selection of service sites was calculated differently depending on how many sites the local agency had. If there was only one site for the local agency the probability of selection (P_{SS}) was 1.0. If there were two or more sites, the first site was selected because it was the primary site while the second site was randomly selected from the remaining sites. Thus the appropriate sampling probabilities for these agencies were:

First site : $P_{SS}=1$

Second site: $P_{SS}=1/(N_S-1)$,

where N_S is the total number of sites within the local agency.

Where the local agency did not provide services, the sites were selected at random. For these cases, the sampling probability for each site was:

First site : $P_{SS}=1/N_S$ if one site was selected

Second site: $P_{SS}=2/N_S$ if two sites were selected

with N_S defined as above.

The probability for the two-site case was derived as follows: the probability that a given site was not selected in two trials is: $[N_S-1)/N_S][N_S-2)/(N_S-1)]$. The complement of this is: $1-(N_S-2)/N_S = 2/N_S$.

Since sampling weights are proportional to the reciprocals of sampling probabilities, service site weights were calculated by inverting the probabilities as defined above.

For all practical purposes, participants were selected randomly within participant categories from among those available at the local agency. Thus, if k participants of a given type were sampled, the appropriate sampling probability per participant (P_p) was $P_p = k/N_C$, where N_C was the known or estimated total number of participants at the service site in the appropriate participant category. This probability is derived as follows: the probability that a given participant is not selected in k trials is:

$$[(N_C-1)/N_C] [(N_C-2)/N_C-1] \dots [(N_C-k)/(N_C-k-1)]/N_C.$$

The complement of this is $1-(N_C-k)/N_C=k/N_C$.

As for the service sites, the actual sampling weight is the reciprocal of the sampling probability, or N_C/k .

The sampling probabilities were appended to the participant files by adding new records with sampling probabilities for the State, local agency, service site, and participant levels. Within SPSS run streams, the appropriate piate sampling weight at the participant level was calculated by taking the reciprocal of the product of the sampling probabilities:

$$W=1/(P_S * P_{LA} * P_{SS} * P_P)$$

which together provided national representation to the sample.

2.7 Data Analysis

Analyses of State and local agency data were based on unweighted frequencies. The number of valid responses (n) was reported and the proportion of respondents (percent reporting) for each table was provided. In cases where it was possible to have indicated more than one response, total frequencies did not equal 100 percent.

Participant data were weighted to achieve national representation prior to analyses; therefore, frequencies reported were for WIC participants nationally. The proportion (percent) of participants reporting and/or the number of valid cases were provided for each table; mean, median and standard deviations were reported as appropriate, for various frequency distributions.

Since statistical methods of association between variables (e.g., correlation coefficients) were inappropriate for weighted data - every statistic became significant none were reported. To use such analyses would have required time-consuming calculations of standard errors. Multiple regressions of several dependent variables of interest were conducted, however.

After uploading the data onto the mainframe computer, analyses were conducted utilizing SPSS Version 9. The entire data base and all SPSS programming steps later were converted to SAS for use at the Washington Computer Center (WCC) of the Department of Agriculture.

2.8 Comparisons of Study and Program Data

As an overall check of study data quality, Tables 2.8.1 to 2.8.3 show comparisons between weighted study data and FNS program data for a comparable time period. The three areas compared are percent of participants by category, by race, and by priority level.

Differences between the two data sets generally were quite small. FNS data on participant category and priority level enrollment counts were submitted by WIC State agencies for September, 1984. Insofar as agencies are not required to report these items routinely, it is known that some State agencies roughly estimated these figures. Thus, it is not clear if the small discrepancies between the findings reflect errors in the study

TABLE 2.8.1

WIC PARTICIPANT CATEGORY DISTRIBUTIONS OF STUDY
AND FNS ENROLLMENT DATA, SEPTEMBER, 1984 (PERCENT DISTRIBUTION)

PARTICIPANT CATEGORY	STUDY DATA	FNS DATA
Pregnant Women	12.5	13.1
Breastfeeding Women	3.8	3.8
Postpartum Women	6.9	5.0
Infants	25.4	28.0
Children	<u>51.3</u>	<u>50.2</u>
Total	99.9	100.1

TABLE 2.8.2

RACE DISTRIBUTION COMPARISONS BETWEEN FNS AND STUDY
ENROLLMENT DATA, SEPTEMBER, 1984 (PERCENT DISTRIBUTION)

RACE	STUDY DATA	FNS DATA
White	48.1	46.1
Black	30.9	30.7
Hispanic	17.2	18.4
Asian/Pacific Islander	1.5	2.4
American Indian/ Alaska Native	<u>2.2</u>	<u>2.4</u>
Total	99.9	100.0

TABLE 2.8.3

PRIORITY LEVEL COMPARISONS BETWEEN FNS ENROLLMENT DATA AND
CURRENT PRIORITY STUDY DATA, SEPTEMBER, 1984 (PERCENT DISTRIBUTION)

PRIORITY LEVEL	STUDY DATA	FNS DATA
1	26.8	28.4
2	10.3	11.9
3	37.8	38.5
4	4.1	4.6
5	11.4	11.6
6	6.3	4.9
7	0.6	0.2
Questionable	<u>2.7</u>	<u>NA</u>
Total	100.0	100.1

data, errors in the program data, or result from other explanations (e.g., the study data were collected August to December, 1984 while FNS data were for September, 1984 alone). Overall, the general similarity of the data lends confidence to both data sources.

FNS data are derived from annual reports by WIC local agencies on racial participation, this one for September, 1984. Once again it is known that local agencies often estimate racial participation, so it is not clear if the small discrepancies represent errors in study or program data.

Overall, these comparisons suggest the study data correspond very closely with FNS program data. Possible sources of error in the study data include sampling or weighting errors; sources of error in the program data include poor reporting by agencies. However, the general similarity of the findings suggests that the study sampling and weighting are reasonably accurate and nationally representative; this gives confidence to the general quality of the study's findings.

SECTION II: STATE AND LOCAL AGENCY RESULTS

CHAPTER 3

STATE AND LOCAL AGENCY CHARACTERISTICS

Overview

This chapter examines characteristics and policies of State and local WIC programs in Fiscal Years 1983 and 1984. Areas of particular interest are eligibility criteria and policies, coordination with other health and social services, and food package tailoring policies.

Federal rules establish overall parameters for income and nutritional risk eligibility of WIC participants; State and local agencies may refine that further. Over two-thirds of the States in the sample used about 185 percent of poverty as the WIC income standard (i.e., \$18,870 for a family of four for July 1, 1984 to June 30, 1985). However, the mean poverty standard for States was 176 percent of poverty and was slightly lower (168 percent of poverty) for local agencies.

The study examined various aspects of nutritional risk eligibility criteria. For example, almost one-half of the State agencies had Statewide limits on the number of times a person could be certified for prevention of regression, and an additional one-quarter had some local agencies with such limits.

There were a variety of methods of assessing dietary intakes, but most (85.7 percent) of the local agencies used a 24-hour recall, although some used it in conjunction with other methods such as a food frequency check list or description of typical daily intake. To evaluate the adequacy of the participants' diets, most local agencies (70.1 percent) compared the diets to the Basic Four food group recommendations.

Most of the State and local agencies in the sample reported conducting a variety of outreach activities in Fiscal Years 1983 or 1984. These included referral networks with other health or social services; pamphlets, brochures or flyers; newspaper notices; and word-of-mouth. When asked to rank the most effective techniques, the three highest ranking activities were referral networks with other health or social services, word-of-mouth, and letters/referral forms to local physicians. State and local agencies commonly targeted outreach to certain participant categories, especially pregnant women and infants.

There was substantial evidence of coordination between WIC and other health services, especially obstetrics or pediatrics. Two-thirds of the WIC service sites in the sample directly provided health services at the same clinic (i.e., they were colocated), and almost half provided referrals to other services or individuals (multiple answers were permissible). The specific services most commonly provided at the same site were immunization, well baby care, and well child care. The pattern of services provided through agreements with providers at different sites was a little different, with prenatal/obstetric services, well baby, and well child services leading. Further, the WIC program local agencies routinely made referrals to a number of other health or social services; a majority made referrals to the Food Stamp Program, family planning, Aid to Families with Dependent Children, and Medicaid.

"Tailoring" the WIC food package refers to modifying or restricting the types of food provided to participants, based on individual needs or State or local nutrition policies. About two-thirds of the States in the sample had established tailoring policies, which were occasionally modified by or embellished by local agencies. Of the remaining 35 percent of States, 21 percent had local agencies that developed tailoring policies and 14 percent had neither State nor local tailoring policies. There was considerable variation in the types of tailoring policies, but common ones included providing less food based on participant category (e.g., less milk to younger children) or less food to obese participants.

3.1 Introduction to Agency Characteristics

While Federal regulations provide guidelines for certification of participants, food packages, and nutrition education, State and local agencies are accorded freedom in establishing policies within these guidelines.

The 28 State agencies in the sample were surveyed to examine these policies and obtain information on participation levels during the study period. All analyses were based on unweighted frequencies since conclusions involve agencies rather than participants. Because the sample was selected with probability proportionate to size, larger State (or local) agencies tended to be slightly overrepresented and smaller agencies slightly underrepresented. Although larger agencies were overrepresented, they also had more participants and thus the sample largely corresponds to this tendency. The problem is particularly noteworthy for State agencies since Indian State agencies were not explicitly sampled, but were treated as local agencies within a State. Thus, unweighted percentages of this portion of the study do not necessarily represent distributions for State or local agencies, but represent percent of agencies in the sample.

Chapter 3.0 summarizes the results of the State and local agency analyses. Agency characteristics and income eligibility criteria are detailed in Sections 3.2 and 3.3. Section 3.4 describes policies and procedures for certification of eligibility of participants. Outreach at both levels is described in Section 3.5, and various services and the levels at which they are provided are detailed in Section 3.6. The final segment of this Chapter, Section 3.7, outlines food delivery systems and policies governing tailoring of food packages.

The percent reporting data for local agencies is based on the proportion of 204 local agencies supplying complete questionnaires since four local agencies provided only participation figures (see Chapter 2).

3.2 Program Operation and Agency Size

State and local agencies were asked to provide the year in which their WIC program became operational. A few local agencies indicated they were officially in operation in 1974 but had been part of the pilot program for WIC prior to that time. States provided the number of local agencies they were responsible for administering. Local agencies indicated the number of service sites sponsored by their agency. Although service site was defined as any location providing, at a minimum, nutrition education and at least one other WIC service, there was some confusion in responding and answers were clarified either by telephone or during on-site visits. Service sites are also sometimes called "clinics."

About three-fourths (74.8 percent) of the States responding and 27.0 percent of the local agencies reported their WIC programs were operational by the end of 1974 (Table 3.2.1). By 1976, almost all State WIC programs were in operation (96.3 percent), but only a little more than half (55.4 percent) the local agencies were operational. Yet, by the end of 1980, 96.5 percent of the local agencies were in operation, while no other State WIC programs were added until 1984. (Note: There has been growth in the number of Indian State agencies, which were not completely represented in the sample, as discussed above.)

TABLE 3.2.1

PERCENT OF WIC PROGRAMS OPERATIONAL BY YEAR.*

YEAR	CUMULATIVE PERCENT OF PROGRAMS OPERATIONAL	
	State Programs	Local Programs
1974	77.8	27.2
1975	85.2	37.1
1976	96.3	55.4
1977	96.3	70.3
1978	96.3	80.2
1979	96.3	89.6
1980	96.3	96.5
1981	96.3	98.0
1982	96.3	99.5
1983	96.3	100.0
1984	<u>100.0</u>	<u>100.0</u>
Total	100.0	100.0
Valid Cases (n)	27	202
Percent Reporting	96.4	99.0

* For this and all subsequent tables in Chapter 3, the data represent unweighted results. Since the sample was selected with probability proportionate to size, it tends to slightly over-represent large State (and local) agencies and under-represent small ones. While large agencies are over-represented, they also enroll most WIC participants.

Table 3.2.2 summarizes the number of local agencies per State and Table 3.2.3 the number of service sites per local agency. The mean numbers of local agencies per State or service sites per local agency in this sample are high since the sample overrepresents large agencies. FNS data for Fiscal Year 1984 shows a mean of 20 local agencies per State agency or 31 local agencies per geographic State agency (i.e., excluding Indian State agencies). The number of local agencies per State varied from 1 to 99, with the mean number 39 and the median 27. The fairly large standard deviation (28.7) reflects this variance in number of local agencies per State. About a third (36.8 percent) of the local agencies had one or two service sites and over-half (54.9 percent) had five or less sites. The mean number of sites was 7 and the median 5; the small standard deviation reflects far less variance in number of sites per local agency than number of local agencies per State.

Most State agencies were responsible for monitoring less than 31 local agencies. More than three-fourths (76.5 percent) of the local agencies monitored 10 or fewer service sites.

3.3 Income Eligibility

Federal regulation provides for a maximum allowable income for a family four at \$18,870 annually for July 1, 1984 to June 30, 1985. Some agencies indicated slightly higher income levels when annualized and discrepancies were probably due to conversion from weekly or monthly income levels. Income in excess of \$18,870 was truncated back to that level for analysis.

Income guidelines are established by Federal regulation; however, State agencies can lower the income requirement, and some local agencies appear to have been given authority to do so as well by their State agency.

Table 3.3.1 describes the maximum allowable annual income for a family of four adopted by State and local WIC agencies. The largest proportion (71.4 percent) of the 28 states allowed \$18,000-\$18,870 annually. Approximately 10 percent used \$15,000-\$15,999 as their cut-off level. The mean income was \$17,878, and the standard deviation of \$1,687 indicated a general clustering of allowed income levels.

Similarly, most agencies (82.1 percent) reported they used 151 to 185 percent of poverty for income eligibility, with a mean value of 176 allowable income based on its relation to poverty level. None reported criteria below 130 percent of poverty.

Local agencies followed the same patterns as the State agencies for income eligibility and poverty level. Almost two-thirds of the locals (64.2 percent) used 151 percent to 185 percent of poverty as their standard. The mean annual income allowed by locals was slightly less than for States (\$17,113 as opposed to \$17,878, respectively) but the larger standard deviation for local agencies would appear to indicate income criteria are more consistent at the State agency level.

It was of interest to know at what decision-making level the primary decisions for income cut-off levels were made. Table 3.3.2 describes these mechanisms for establishing income eligibility criteria. The State WIC Director appeared to be the primary decision-maker (83.3 percent) regarding how income guidelines were to be implemented. Still, 9.3 percent of the decision-makers appeared at the local agency level with local agency directors accounting for more than 80 percent of the decisions.

TABLE 3.2.2

PERCENT OF STATE AGENCIES WITH NUMBER OF
LOCAL AGENCIES PER STATE AGENCY IN 1984.

NUMBER OF LOCAL AGENCIES PER STATE AGENCY	PERCENT OF AGENCIES
1 - 10	14.3
11 - 20	17.9
21 - 30	17.9
31 - 40	10.7
41 - 50	7.1
51 - 60	7.1
61 - 70	3.6
71 - 80	3.6
81 - 90	14.3
91 - 100	<u>3.6</u>
Total	100.1
Mean number of local agencies	39
Median number of local agencies	27
Standard Deviation	28.7
Valid Cases (n)	28
Percent Reporting	100.0

TABLE 3.2.3

PERCENT OF LOCAL AGENCIES WITH NUMBER OF
SERVICE SITES PER LOCAL AGENCY IN 1984

NUMBER OF SERVICE SITES PER LOCAL AGENCY	PERCENT OF LOCAL AGENCIES
1	18.1
2	14.7
3	5.9
4	8.8
5	7.4
6-10	21.6
11-20	18.1
21+	<u>5.4</u>
Total	100.0
Mean number of service sites	7
Median number of service sites	5
Standard Deviation	9.1
Valid Cases (n)	204
Percent Reporting	100.0

TABLE 3.3.1

STATE AND LOCAL INCOME ELIGIBILITY GUIDELINES: 1984

GUIDELINE	PERCENT OF STATE AGENCIES	PERCENT OF LOCAL AGENCIES
Maximum Income for a Family of 4		
12,000 - 12,999	0.0	1.5
13,000 - 13,999	7.1	13.2
14,000 - 14,999	0.0	1.5
15,000 - 15,999	10.7	19.6
16,000 - 16,999	3.6	2.5
17,000 - 17,999	7.1	4.9
18,000 - 18,870	<u>71.4</u>	<u>56.9</u>
Total	99.9	100.1
Mean maximum income	17,878	17,113
Median maximum income	18,868	11,832
Standard Deviation	1,687	2,034
Valid Cases (n)	27	204
Percent Reporting	96.4	100.0
<u>Percent of Poverty*</u>	<u>Percent of State Agencies</u>	<u>Percent of Local Agencies</u>
<130%	0.0	1.5
130 - 150%	17.9	34.3
151 - 185%	<u>82.1</u>	<u>64.2</u>
Total	100.0	100.0
Mean percent poverty level	176	168
Median percent poverty level	185	180
Standard Deviation	17	20
Valid Cases (n)	27	204
Percent Reporting	96.4	100.0

* Percent of poverty has the following equivalency in dollars: 185% = \$18,870; 151% = \$15,402; 150% = \$15,300; 130% = \$13,260.

TABLE 3.3.2

INCOME ELIGIBILITY GUIDELINE DECISION-MAKERS

INCOME ELIGIBILITY GUIDELINE ESTABLISHMENT	PERCENT OF LOCAL AGENCIES
<u>Income Eligibility Guideline Decision-makers</u>	
State WIC Director	83.3
Local Agency Director	7.8
State Health Board	3.4
Other State Official	2.0
Other Local Official	1.0
State Nutrition Supervisor	0.5
Local Board	0.5
Other	<u>1.5</u>
Total	100.0
Valid Cases (n)	204
Percent Reporting	100.0

3.4 Certification Procedures

While Federal regulations provide the general guidelines for certifying a woman, infant or child for the WIC program (refer to Chapter 1.0), State and local agencies were given some freedom in establishing policies and procedures. In addition to meeting income eligibility, the candidate for the WIC program must be certified by a competent professional authority as being at nutritional risk. This can be determined by the existence of anthropometric, medical, dietary or other health risks. The following subsections describe procedures for certification as they pertain to risk documentation, certification criteria, dietary deficiency assessment and limitations imposed by State and local agencies on certifications.

Certification Policies

Number of Certifications - More than a third of the States (39.3 percent) and their local agencies had no policy to limit the total number of times a given condition could be used for WIC certification. Slightly more of the States (42.8 percent) had such policies, and their local agencies had not modified them. Among these states, one-fourth limited the number of certifications for some anthropometric reasons; over half (58.3 percent) limited for prevention of regression, and 41.7 percent limited for inadequate diet. Less than 10 percent (8.3 percent) of the 12 States that had policies limiting the number of certifications for certain conditions limited participants in all categories to one certification.

Only 7.1 percent of States (two) also had local agencies with their own policy limiting the number of certifications. Both these States had a policy to limit certifications to prevent regression, but only one State had any local agencies with a similar policy (one-fifth of its locals), and in one of the States, 23.1 percent of its local agencies limited certification for inadequate diet or failure to implement nutrition information.

Within 10.7 percent of the State agencies (three) that had no policies limiting the number of certifications, 15.9 percent of the 44 local agencies had their own limiting policies. These limitations, are described as follows:

Proportion of Local Agencies with Policy

- | | |
|--|-------|
| ● No attempt to implement nutrition information or continued inadequate diet | 57.1% |
| ● Participant shows no health/medical improvement | 28.6% |
| ● Prioritization of certification by priority group | 14.3% |
| ● Include postpartum women only if no waiting list | 14.3% |
| ● Other | 71.4% |

The "other" category represents policies such as other types of limitations on certification of postpartum women, children, or nutritional risk restrictions.

Certification for Dietary Deficiency - Five State agencies (17.9 percent) limited the number of times a participant could be certified for dietary deficiency, and their local agencies had no special policies. About one-fifth of the States (21.4 percent) had no policies in this area but had

at least some agencies (24.5 percent of the agencies in these States) with policies limiting dietary deficiencies as a condition of eligibility. More than half (57.1 percent) the States and their locals set no limitations of this type. One State set limits for dietary deficiency as a reason for certification, and one of its 12 local agencies modified the limits.

Table 3.4.1 summarizes dietary deficiency certification policies for States with policies where their locals didn't have one, and for States where only the local specified a policy.

Certification to Prevent Regression - One fourth of the State agencies and their local agencies had no established policy to limit the number of certifications to prevent regression in nutritional status. Nearly half (42.9 percent) the States had a policy and the local agencies appeared to follow the State policy. Among these States the limitations by participant category are noted in Table 3.4.2.

Data were not provided by 8.3 percent of the States that specified they limited the number of certifications to prevent regression. Overwhelmingly most limited participants to one such certification.

One State had no policy when one of its nine local agencies established certification limits. This local limited breastfeeding women, infants and children to one certification to prevent regression.

About one-quarter (28.6 percent) of the State agencies had some of their local agencies (14.3 percent of 91 local agencies in these States) limit certification to prevent regression. Of these locals, 61.5 percent limited the three categories to one certification following State established policies, but 7.7 percent of the locals in States with single certification limits for breastfeeding women and infants allowed two such certifications. Another 7.7 percent of locals allowed infants and children two certifications where the State limited them to only one.

Over 15 percent of the locals (15.4 percent) had more restrictive standards than their State agency. Where the State allowed two certifications to prevent regression, 7.7 percent allowed none, and the same proportion allowed only one certification (15.4 percent of the local agency data for States allowing two certification were missing.)

Risk Documentation

It was of interest to know whether local agencies used State established risk criteria or whether the State agency accorded local agencies the right to create risk criteria for use at the local agency level. Only one State agency made this allowance but only 15.8 percent of its 19 local agencies created their own criteria. Of the locals using different criteria, a third used different anthropometric criteria and all used "other" criteria established at the local level. "Other risk" included mostly pregnancy related risks (e.g., prima gravida, young gravida, poor diet during pregnancy), tuberculosis, and lack of vegetables in the diet.

Although the other 27 States in the sample did not allow risk criteria creation at the local level, five of them had local agencies that used their own criteria anyway. However, only 10.8 percent of the 74 local agencies in these five States did so.

TABLE 3.4.1

STATE AND LOCAL POLICIES FOR LIMITATIONS ON CERTIFICATIONS
FOR DIETARY DEFICIENCY

MAXIMUM NUMBER OF CERTIFICATIONS BY PARTICIPANT CATEGORY	POLICY LIMITATIONS OF STATES IN WHICH STATE HAD POLICY BUT LOCAL AGENCY DID NOT* (PROPORTION)	POLICY LIMITATIONS OF STATES IN WHICH STATE HAD NO POLICY BUT LOCAL AGENCY HAD ITS OWN POLICY** (PROPORTION)
Pregnant Women		
1	80.0	53.8
2	20.0	23.1
no policy	0.0	23.1
	<u>100.0</u>	<u>100.0</u>
Breastfeeding Women		
1	40.0	23.1
2	60.0	53.8
no policy	0.0	23.1
	<u>100.0</u>	<u>100.0</u>
Postpartum Women		
0	20.0	15.4
1	20.0	53.8
2	60.0	15.4
no policy	0.0	15.4
	<u>100.0</u>	<u>100.0</u>
Infants		
0	0.0	7.7
1	20.0	69.2
2	80.0	0.0
no policy	0.0	23.1
	<u>100.0</u>	<u>100.0</u>
Children		
0	0.0	7.7
1	20.0	23.1
2	40.0	61.5
3	20.0	0.0
4	0.0	7.7
>4	20.0	0.0
	<u>100.0</u>	<u>100.0</u>
Valid Cases (n)	5	6
Percent Reporting***	17.9	21.4

* Of the 28 States, 17.9 percent limited certifications but their local agencies had no policy of their own.

** Of the 28 States, 21.4 percent had no policy but 24.5 percent of their 53 local agencies had established policies limiting the number of certifications for dietary deficiency. Percentages represent proportion of the 24.5 percent of the local agencies with each policy.

*** Proportion of 28 States.

TABLE 3.4.2

LIMITATIONS IN NUMBER OF CERTIFICATIONS TO PREVENT
REGRESSION BY PARTICIPANT CATEGORY FOR STATES WITH A
POLICY WHERE NO POLICY
WAS PRESENT AT THE LOCAL AGENCY LEVEL

NUMBER OF CERTIFICATIONS BY PARTICIPANT CATEGORY	PERCENT OF STATES REPORTING LIMITATIONS*
Breastfeeding women	
0	16.7
1	75.0
2	0.0
	<u>91.7</u>
Infants	
0	8.3
1	75.0
2	8.3
	<u>91.6</u>
Children	
0	0.0
1	91.7
2	0.0
	<u>91.7</u>

* Data were missing from 8.3 percent of the agencies

The reasons for certifying a participant as being eligible for the WIC program are to be documented in the individual's WIC record or chart. Various local agencies used different guidelines in documenting those reasons which are described in Table 3.4.3. Respondents indicated the three most common procedures used for documenting risk. Indication that all risks which were present were recorded did not preclude a respondent from also indicating other procedures used at the agency, and many appeared to have done so. The majority of agencies (84.6 percent) indicated that all risk criteria present were recorded, and 29.8 percent reported at least the single most important criterion.

Staff at WIC service sites appeared to be given professional freedom in assessing an individual WIC client's risk status, since 42.4 percent of the agencies allowed staff to decide which and how many criteria to record.

Dietary Intake Assessment

Table 3.4.4 summarizes the methods used to obtain dietary intakes. The predominant use (85.7 percent) of 24-hour dietary recalls is not surprising since it is the most commonly used method in nutrition assessment. About half of the agencies used each of food frequencies or typical daily intake (e.g., diet history) descriptions.

However, 61.4 percent of the agencies reported they did not always use the methods indicated in Table 3.4.4 for all participants. The reasons for exceptions to commonly used methods are described in Table 3.4.5. The reasons appear to reflect variance in methods based on differing information needs for assessment of individual WIC clients, although relatively few respondents (35.8 percent) provided reasons.

Table 3.4.6 summarizes the methods used by staff in evaluating a client's dietary intake information. While a wide variety of methods were used, 70.1 percent of the local agencies compared dietary intake to the Basic 4 food group recommendations.

3.5 Outreach

During Fiscal Years 1983 to 1984, 92.9 percent of State agencies and 98.5 percent of local agencies conducted outreach activities. One of the two States that did not conduct outreach at the State level stated it was because they felt outreach was more effectively conducted at the local level. For the few local agencies (1.5 percent) that did no outreach during the period, the reasons were that staff was inadequate or time was insufficient for conducting outreach activities.

In addition to indicating which outreach methods were used (Table 3.5.1) agencies were asked to rank those methods that they considered the most effective in increasing program enrollment. The "effectiveness score" in Table 3.5.1 is the proportion of respondents who ranked a given method as first, second or third in effectiveness.

It was apparent that methods most frequently used were not always perceived as being the most effective. For example, 89.3 percent of State and 96.6 percent of local agencies utilized pamphlets but perceived effectiveness scores were only 35 percent and 26 percent, respectively. Posters exhibited similar use and effectiveness score patterns with over 70

TABLE 3.4.3

LOCAL AGENCY STAFF PROCEDURES FOR DOCUMENTING RISK CRITERIA*

PROCEDURES USED BY STAFF	PERCENT OF LOCAL AGENCIES
All risk criteria present are recorded**	84.6
Certifying staff decide which and how many criteria to record	42.4
Most easily identifiable criteria are recorded	34.6
Single most important criterion is recorded	29.8
Certain number of most important criteria are recorded***	23.9
Other	<u>0.8</u>
Valid Cases (n)	204
Percent Reporting	100.0

* Respondents indicated the three most common procedures for documenting risk criteria at each service site. Since more than one response was possible, totals do not equal 100 percent.

** An indication that all risk criteria present were recorded did not preclude the respondent from indicating other procedures used.

*** Agencies indicated from 1 to 20 criteria were recorded, with about the same proportion of agencies documenting 1 or 2 criteria as those recording 3 or more risks.

TABLE 3.4.4

LOCAL AGENCY METHODS USED TO OBTAIN DIETARY INTAKE INFORMATION
FROM WIC CLIENTS

METHOD OF DIETARY INTAKE USED	PERCENT OF LOCAL AGENCIES USING METHOD
24-Hour Dietary Recall	85.7
Food Frequency/Food Item Checklist	50.0
Description of Typical Daily Intake	48.3
Dietary Record or Diary	11.8
Total Other	8.4
Scorecard	4.2
Food Diary	0.3
Other	<u>3.9</u>
Valid Cases (n)	204
Percent Reporting	100.0

TABLE 3.4.5

WHY METHODS USED TO OBTAIN DIETARY INTAKE INFORMATION
ARE NOT USED FOR ALL CLIENTS*

REASON METHOD OF EVALUATION NOT ALWAYS USED	PERCENT OF LOCAL AGENCIES
Other methods deemed more appropriate for special categories of participants	19.2
Other methods are best for some clients	17.8
Score card used instead for some clients	13.7
Self-administered food frequency check- list is used instead	12.3
Provider needs are considered	9.6
Food diary is used for some clients	1.4
More information on clients needed	1.4
Other**	<u>24.7</u>
Total	100.1
Valid Cases (n)	73
Percent Reporting	35.8

* Refer to Table 3.4.4 for methods used in dietary intake.

** Includes variations based on State standards for dietary intake. Responses were combinations of methods, a permutation of a method, or use of a standard for evaluation based on State guidelines.

TABLE 3.4.6

METHOD USED BY WIC STAFF FOR EVALUATING DIETARY INTAKE TO
DETERMINE NUTRITIONAL RISK STATUS OF CLIENTS

METHOD OF EVALUATION OF DIETARY INTAKE	PERCENT OF LOCAL AGENCIES*
Compare intake to Basic 4 food group recommendation	70.1
Compute estimated nutrient intake and compare to 100% of appropriate RDA	14.2
Compute estimated nutrient intake and compare to 66-99% of RDA for specific food items	4.4
Compare Intake level to other nutrient standards**	
For iron or vitamin intake	1.0
For other or more than one nutrient	2.9
Compare intake to other food group recommendations	
State Standards	5.4
RDA	2.0
Number of weekly servings	1.5
Carbohydrates and fats	2.0
Other or more than one of above	16.2
Other	
State Standards	6.4
Evaluation of Alcohol Intake	3.9
WIC Scorecard	2.0
Unfavorable Dietary Pattern	1.5
Medically Prescribed Diet	6.5
Other or more than one of above	<u>8.3</u>
Valid Cases (n)	204
Percent Reporting	100.0

* More than one response was possible so totals do not
equal 100 percent.

**Analysis of diet was made through measures such as Mean
Adequacy Rates (MAR), Nutrient Adequacy Rates, (NAR),
Index of Nutritional Quality (INQ), Nutrient Density, etc.

TABLE 3.5.1

OUTREACH METHODS UTILIZED BY STATE AND LOCAL AGENCIES IN FISCAL YEAR 1983 OR
FISCAL YEAR 1984 AND THE PERCEIVED EFFECTIVENESS OF THOSE METHODS
(IN DESCENDING ORDER OF USE BY STATE AGENCIES)

OUTREACH METHOD	PERCENT OF STATE AGENCIES	PERCENT OF LOCAL AGENCIES	EFFECTIVENESS SCORE*	
			STATE	LOCAL
Referral Network with Other Health or Social Service Program	89.3	96.6	80%	85%
Pamphlets/Brochures/Flyers	89.3	89.2	35%	26%
Newspaper Notices/Press Releases	85.7	63.2	34%	16%
Word of Mouth**	82.1	96.6	75%	83%
Posters	71.4	75.0	13%	11%
Letters/Referral Forms to Local Health/Medical Centers	67.9	71.6	5%	34%
Radio Spots	67.9	48.5	23%	16%
Attendance at or Convening of Community Outreach Meeting	60.7	67.2	29%	13%
Letters/Referral Forms to Local Physicians	53.6	68.6	45%	34%
Toll-free Telephone Lines	50.0	12.3	37%	8%
TV Spots	42.9	29.9	32%	28%
Letters to Private Industries or Food Chains	28.6	15.2	30%	3%
Home Visits**	21.4	29.9	9%	11%

TABLE 3.5.1 (CONTINUED)

OUTREACH METHOD	PERCENT OF STATE AGENCIES	PERCENT OF LOCAL AGENCIES	EFFECTIVENESS SCORE*	
			STATE	LOCAL
Other	14.3	25.6	30%	52%
Letter sent in conjunction with other social agency's mailing	10.7	10.3		
Health Care Screening	3.6	0.0		
Fairs	3.6	5.9	100%	
Mailings	0.0	1.5		
Attendance at Schools/Community Agencies	0.0	1.5		
Attendance at Social Service Center	0.0	0.5		
Others	0.0	5.9		
Valid Cases (n)	28	204	28	204
Percent Reporting	100.0	100.0	100.0	100.0

* Effectiveness score represents the percent of respondents utilizing a given method who ranked it as the first, second or third most effective method for increasing program enrollment during Fiscal Year 1983 or 1984.

** While 75 percent of State agencies indicated word of mouth and 21.4 percent home visits, it is not known how these forms of outreach were achieved at the State level.

percent of the agencies using them but their effectiveness score was between 11 and 13. Although 67.9 percent of the State agencies used letters or referrals to local health and medical centers, only 5 percent perceived it in the top three for effectiveness. This pattern also was true for home visits at the State level, although it was unclear how the State conducted home visits. More than three-fourths (82.1 percent) of the State agencies stated they used word of mouth outreach, with a 75 percent effectiveness score; it also was not apparent how States conducted this type of outreach.

Outreach Targeting

In Fiscal Year 1983, 42.9 percent of the States and 61.3 percent of the local agencies targeted outreach activities to certain categories of participants. Among the States and local agencies that do target outreach activities, all the States targeted to pregnant women, but less than two-thirds (62.7 percent) of the locals did likewise. Two-thirds of the States (66.7 percent) and a third of the locals (33.8 percent) focused on breastfeeding women; and while two-thirds (66.7 percent) of States conducted outreach aimed at increasing infant participation, less than half (45.6 percent) the local agencies did so. Nonbreastfeeding women received attention from only 8.3 percent of States and 9.8 percent of locals; and children were the focus of outreach for one-fourth (25.0 percent) of State agencies and 18.1 percent of locals.

Outreach Languages

Substantially more outreach was conducted in non-English languages by State agencies than by local agencies, which most likely reflects better resource availability at the State level for such outreach. Table 3.5.2 summarizes languages used in State and local outreach activities for FY 1983. It is not surprising that Spanish was the most frequently utilized language since it is likely that the availability of materials or translations in Spanish was most common.

3.6 Local Agency Services

Table 3.6.1 summarizes the types of WIC services that were provided at the study service sites. Nutrition education and certification services were almost always available at sites, with initial certifications less frequently available. This would seem to indicate that participants go to more centralized locations for their initial certification, which also may be the case for pickup of food instruments. Food pickups were seldom available at the sites, and, when available, probably were for special formula prescriptions or other special food items.

Health Care Services

Another area of interest was the frequency with which pediatric and/or obstetric health care services were integrated directly with WIC services. Of 204 local agencies, 95.8 percent reported that pediatric and/or obstetric services were provided at their service sites. Table 3.6.2 identifies the proportion of service sites (by number of service sites per local agency) located in the same facility as pediatric/obstetric care. Smaller and larger agencies typically had over half of their sites located in health care facilities. The agencies with 5, or 6-10 sites had a lower proportion of sites in pediatric/obstetric facilities (less than half of all sites).

TABLE 3.5.2

LANGUAGES USED IN OUTREACH ACTIVITIES DURING FISCAL YEAR
1983 BY STATE AND LOCAL WIC AGENCIES

LANGUAGES	PERCENT OF AGENCIES*	
	STATE	LOCAL
Spanish	57.1	42.0
Vietnamese	21.4	0.0
Cambodian or Khmer	14.3	7.0
Haitian or Creole	14.3	0.0
Laotian	14.3	0.0
French	7.1	0.0
Native American Language	7.1	0.0
Thai	7.1	0.0
Chinese	3.6	0.0
Portuguese	3.6	0.0
Other	<u>10.7</u>	<u>1.0</u>
Valid Cases (n)	28	204
Percent Reporting	100.0	100.0

* More than one language could be specified so totals do not equal 100%.

TABLE 3.6.1

WIC SERVICES PROVIDED AT STUDY SERVICE SITES*

SERVICES	PERCENT OF SERVICE SITES
Nutrition Education	98.0
Subsequent Certification	94.7
Initial Certification	91.6
Voucher or Check Pick-Up	89.0
Food Pick-Up	5.0
Other**	<u>19.7</u>
Valid Cases (n)	356
Percent Reporting	100.0

* Data obtained from service site survey. There were a total of 356 service sites included in the study. More than one response was possible.

** Other services included health care, various social programs, and referral services.

TABLE 3.6.2

PROPORTION OF SITES LOCATED IN FACILITIES WITH PEDIATRIC/OBSTETRIC CARE

NUMBER OF TOTAL SERVICE SITES	NUMBER OF SITES WITH PEDIATRIC/OBSTETRIC CARE (PERCENT OF LOCAL AGENCIES)								
	0	1	2	3	4	5	6-10	11-20	21+
1	0.0	100.0							
2	4.0	32.0	64.0						
3	0.0	36.4	9.1	54.5					
4	0.0	17.6	11.8	17.6	52.9				
5	15.4	7.7	0.0	0.0	30.8	46.2			
6 - 10	2.8	13.9	13.9	13.9	5.6	5.6	44.5		
11 - 20	0.0	2.9	2.9	5.9	2.9	2.9	26.4	55.9	
21+	0.0	0.0	0.0	18.2	0.0	0.0	9.1	18.2	54.6
Valid Cases (n)	174								
Percent Reporting	85.3								

Table 3.6.3 summarizes how these pediatric/obstetric service were provided at agency sites. More than two-thirds of all WIC sites directly provided health care at the same facility as WIC. When viewed alone or in conjunction with referrals or other forms of agreement it appears that WIC was well integrated with health care services.

Health care services were provided both directly to WIC participants and on a contractual basis. Those services provided directly generally were supported by the umbrella organization under which the WIC program operated, and these services usually were available within the same facility as WIC but were not necessarily provided by WIC staff. Service provided under contract also were operated by providers usually located within the same facility or building as the WIC service site.

The type of health care services that were provided directly or through contract are presented in Table 3.6.4. The three most common services provided directly were immunization, well baby care and well child care. But under contract, prenatal/obstetric services were most frequent, followed by well baby care and well child care. Since prenatal/obstetric services are often given by private physicians or other providers, in contrast to public health clinics, these results are not surprising.

Along similar lines was the extent agencies made appointments for these services. Table 3.6.5 provides the frequency for which appointments, by type, were made for direct and contracted health services. Note that the prevalence of appointments for all services or for pediatric/obstetric services may further demonstrate the link between WIC and critical health services; but few agencies indicated they routinely made appointments, and the frequency was even less for contracted services. The large "other" category included a wide variety of services such as adolescent health care, postpartum services, EPSDT, family planning, and so forth.

Referral Services

As seen in Table 3.6.6, most WIC local agencies provided referrals routinely to the following services: Food Stamp Program (88 percent of WIC agencies), family planning (78 percent), AFDC (74 percent), and Medicaid (60 percent). About half were routinely referred to Early Periodic, Screening Detection and Treatment (EPSDT) or "other" programs. It is important to note that other agencies also made referrals, but at a level less than routinely (e.g., on an individual or as-needed basis).

Certain categories of participants were referred to specific programs. For example, EPSDT, and Head Start are for children only, while family planning and breastfeeding support could only be available to women. The large "other" category reflects a myriad of other social and health programs to which participants are referred. Most frequently mentioned were handicapped children's services.

Child Care Services

Child care (babysitting) services was defined to include both on-site services provided by WIC and arrangements made by WIC staff for individual participant's child care so the participant could attend WIC clinics. Available child care services for WIC participants were surveyed, and of the 356 local agency service sites, child care services were available in only 11.0 percent. It appears that few agencies were able to provide child care services to WIC participants, possibly due to lack of space in the facilities, funding limitations or personnel time constraints.

TABLE 3.6.3

HOW PEDIATRIC/OBSTETRIC SERVICES WERE PROVIDED TO
PARTICIPANTS AT LOCAL AGENCY SERVICE SITES*

METHODS OF PROVISION	PERCENT OF LOCAL AGENCY SITES
Directly Provided	67.7
Referral to other services or individuals**	44.1
Written Agreement with Private Physician	17.1
Written Agreement with Other Public Agency	16.0
Total Other	3.1
Unwritten Agreement	1.7
Other Written Agreement	0.8
Other	<u>0.6</u>
Valid Cases (n)	356
Percent Reporting	100.0

* More than one method of provision could be indicated, so totals do not equal 100%.

** Referrals made to other public agencies or private physicians.

TABLE 3.6.4

TYPE OF HEALTH CARE SERVICES PROVIDED AT WIC SERVICE SITES
(IN DESCENDING ORDER, BASED ON DIRECTLY PROVIDED SERVICES)*

SERVICES	DIRECTLY PROVIDED HEALTH CARE SERVICES (PERCENT OF AGENCY SITES)	CONTRACTED HEALTH CARE SERVICES (PERCENT OF AGENCY SITES)
Immunization Program	69.9	14.9
Well Baby Care	67.7	18.8
Well Child Care	62.9	18.8
Prenatal/Obstetric Services	53.7	24.8
Laboratory Services	52.0	12.9
General Health Care	40.4	12.9
Gynecological Care	39.9	16.3
Pediatric Care	39.6	18.6
Lead Screening Program	33.7	9.0
Dental Care	30.1	8.1
High Risk Medical Care	22.5	15.2
Emergency Health Care	22.8	7.3
Total Other	16.9	5.5
Family Planning	1.7	2.0
Total Comprehensive Health Care	0.8	0.0
Height/Weight/Blood	0.3	0.7
Vision/Hearing Screening	0.3	0.0
Other or more than 1 other service	<u>13.8</u>	<u>2.8</u>
Valid Cases (n)	356	356
Percent Reporting	100.0	100.0

* More than one service could be indicated so percentages do not total 100%.

TABLE 3.6.5

HEALTH CARE SERVICES AT LOCAL AGENCY SITES
FOR WHICH APPOINTMENTS WERE ROUTINELY MADE
(IN DESCENDING ORDER FOR DIRECTLY PROVIDED
SERVICES)

SERVICES	APPOINTMENTS FOR DIRECTLY PROVIDED HEALTH CARE SERVICES (PERCENT OF AGENCY SITES)	APPOINTMENTS FOR CONTRACTED HEALTH SERVICES (PERCENT OF AGENCY SITES)
Pediatric Well Baby	23.1	13.9
All Health Services*	18.1	16.7
Prenatal or Obstetric	11.1	13.9
Immunizations	10.6	4.2
Lab Services	2.3	2.8
Gynecological	1.9	6.9
Lead Screening	0.9	0.0
High Risk Medical	0.5	4.2
Emergency Care	0.0	2.8
Other**	<u>31.5</u>	<u>34.7</u>
Total	100.0	100.1
Valid Cases (n)	119	44
Percent Reporting	58.3	21.6

* All health services that the site offers directly or through contract.

** Includes a wide variety of services such as adolescent health, postpartum services, EPSDT, family planning, Medicaid, diabetic clinics, social workers and tuberculosis control.

TABLE 3.6.6

PROGRAMS TO WHICH WIC PARTICIPANTS WERE REFERRED
ROUTINELY AT THE LOCAL LEVEL*

REFERRAL PROGRAMS	PERCENT OF LOCAL AGENCIES REFERRING
Food Stamps	88.2
Family Planning	77.5
AFDC	73.5
Medicaid	60.3
EPSDT	48.5
Total Other**	46.1
Other Health Screening	9.3
Social Services	4.4
EFNEP	4.4
Other Food/Nutrition Program	1.5
Head Start	0.5
Breastfeeding Support Program	0.5
Other or more than one other program	<u>25.5</u>
Valid Cases (n)	204
Percent Reporting	100.0

* More than one response was possible so totals do not equal 100 percent.

**Also included other specialized programs or services such as handicapped children's services, food bank programs, other health department services, immunizations, well child or baby clinics, lead screening, day care, nursing, housing assistance, transportation, churches, other hospitals and medical services. Most frequently mentioned in this category were services for handicapped children.

Transportation Services

Transportation services available to WIC participants are listed in Table 3.6.7. The information requested was designed to determine if transportation was provided by the individual participant, through public transit, by WIC, or by another social service agency. Public transit appears to have been the most frequently available type of transportation for WIC participants, and services provided by another public agency comprised the second most available source of transportation.

Services for Non-English Speaking Participants

Table 3.6.8 shows the prevalence of agencies with foreign languages spoken by participants or by staff or interpreters. Overall, four-fifths (79.9 percent) of the local agencies had some non-English speaking participants, of which Spanish and Southeast Asian languages (Vietnamese, Cambodian/Khmer, Laotian and Thai) were those most commonly spoken. Of these agencies, 52.5 percent had specific interpreters available. Sources of funding for interpreters included WIC, other agencies, or voluntary service.

When asked the languages spoken by interpreters or staff, the prevalence of foreign-speaking staff appeared a little higher. This problem reflects staff who speak a foreign language but who are not specifically interpreters.

It appears that the foreign language areas with greatest disparities between participants' needs and staff's capabilities are the Southeast Asian languages.

3.7 FOOD DELIVERY SYSTEMS

Food Package Tailoring

The survey examined food package tailoring policies among State and local agencies; Chapter 6 shows information on WIC food packages actually prescribed to participants. Among the State agencies, about one-seventh (14.3 percent) had no tailoring policies at State or local levels, about one-third (32.1 percent) had tailoring policies at the State level which were not modified by local policies, another one-third (3.1 percent) had State level policies which were sometimes modified by local agencies, and about one-fifth (21.4 percent) had no State policies but at least some local policies.

For 32.1 percent of the states, the State agency alone established food package tailoring policy. The proportion of these States reporting each of the listed policies are described as follows:

- | | |
|---|-------|
| ● Less food based on participant category | 55.6% |
| ● Obese participants received less food | 33.3% |
| ● Tailoring is based on individual needs | 11.1% |
| ● Less food if more than one family member on WIC | 11.1% |
| ● Storage preparation/sanitation conditions | 11.1% |

In the case where both the State and the local agency set food package tailoring policy, almost one-third (32.1 percent) of the States and 25.7

TABLE 3.6.7

LOCAL TRANSPORTATION SERVICES AVAILABLE TO PARTICIPANTS*

TRANSPORTATION SERVICES	PERCENT OF LOCAL AGENCIES
Public Transit Available	51.4
Public Agency Provides**	22.2
WIC Provides***	3.4
None Available§	33.4
Don't Know	<u>0.8</u>
Valid Cases (n)	356
Percent Reporting	100.0

- * The questions were designed to determine if transportation was provided by the individual participant or through public transit systems or social service agencies. More than one choice could have been selected, so totals do not equal 100 percent.
- ** Transportation was provided by a non-WIC public agency.
- *** WIC directly provided transportation to participants.
- § None of the mentioned forms of transportation was available. It is therefore assumed participants or their friends/family provided their own transportation.

TABLE 3.6.8

LANGUAGES OF NON-ENGLISH SPEAKING WIC PARTICIPANTS AND THOSE
SPOKEN BY WIC STAFF OR INTERPRETERS (LISTED IN ORDER OF DECREASING FREQUENCY
OF LANGUAGES SPOKEN BY WIC PARTICIPANTS)*

LANGUAGES	PERCENT OF AGENCIES WITH LANGUAGE SPOKEN BY WIC PARTICIPANTS	PERCENT OF AGENCIES WITH LANGUAGE SPOKEN BY WIC STAFF INTERPRETERS
Spanish	67.2	56.4
Vietnamese	53.4	21.6
Cambodian/Khmer	39.7	18.6
Laotian	37.7	18.6
Thai	19.1	9.8
Chinese	16.7	6.4
Haitian/Creole	12.3	6.9
French	5.9	11.3
Portugese	5.9	3.4
Polish	3.4	2.0
Arabic/Egyptian	2.9	0.5
Native American Language	2.5	2.5
Hmong	2.0	1.5
Farsi/Hindi/Indian dialect	0.5	1.5
Sign	0.5	0.5
Korean	0.5	0.0
German	0.0	1.5
Other	<u>14.7</u>	<u>7.4</u>
Valid Cases (n)	204	204
Percent Reporting	100.0	100.0

* More than one language could be specified so percentages do not total 100%.

percent of the local agencies in those States had defined tailoring policies. Where State and local agency policy was the same, more than two-fifths (44.4 percent) of these States and 61.1 percent of their locals prescribed less of certain foods based on participant category or age.

Another prevalent policy choice was food package tailoring based on individual needs. More than 10 percent (11.1 percent) of the States and 22.2 percent of their locals tailored based on individual needs. In 20.6 percent (42) of the locals, State and local agency policy differed. The following shows the distribution of policy choices among these locals. "Less food given to certain participant groups" was the most common policy, followed by a related policy of "overweight clients receiving less milk or cheese." Locals were able to specify up to three distinct policies, so the sum of the percentages across categories is greater than 100 percent. The categories also are not mutually exclusive.

<u>Policy</u>	<u>Frequency</u>	<u>Percentage</u>
Less given to certain participant groups	24	57.1%
Overweight clients receive less milk/cheese	16	38.1%
Quantities limited depending on family size	7	16.7%
Tailoring on an individual basis	7	16.7%
More given to certain participant groups	6	14.3%
Underweight clients receive more cheese, legumes	2	4.8%
Cheese tailored to local commodity programs	1	2.4%
Other or a mixture of policies	21	50.0%

The local agency alone established food package tailoring policy in 31.6 percent of the local agencies, with the following being the types of policies reported:

● Less food for certain participant categories	77.8%
● More food to certain participant categories	38.9%
● Quantities limited based on individual needs	5.3%
● Other or a mixture of policies noted	77.8%

Again, locals were allowed to specify up to three food package tailoring policies.

Prescribing less food for certain participant categories is clearly the most prevalent food package tailoring policy for both State and local agencies.

Delivery System

Three basic types of food delivery systems are provided for in the WIC program -- retail, home delivery and direct distribution (warehouse). The type of systems for the service sites are shown in Table 3.7.1. Over three-fourths of the sites used a retail distribution system and less than 10 percent used some form of direct distribution. Over 9 percent of the agencies used retail in combination with home delivery or direct distribution.

Table 3.7.2 summarizes the frequency of food instrument issuance for the 356 service sites. Monthly schedules predominated for retail and direct distribution systems, but weekly schedules were most common for home

TABLE 3.7.1

TYPE OF FOOD DELIVERY SYSTEM USED BY LOCAL AGENCY SITES

FOOD DELIVERY SYSTEM USED	PERCENT OF SERVICE SITES
Retail Only	77.4
Home Delivery Only	8.6
Direct Distribution	4.9
Retail & Direct Distribution	4.9
Retail & Home Delivery	<u>4.3</u>
Total	100.1
Valid Cases (n)	350
Percent Reporting	98.3

TABLE 3.7.2

FREQUENCY OF FOOD INSTRUMENT ISSUANCE BY MAJOR TYPE OF FOOD DELIVERY SYSTEM
FOR LOCAL AGENCIES*

FOOD INSTRUMENT ISSUANCE FREQUENCY	RETAIL SYSTEM	HOME DELIVERY	DIRECT DISTRIBUTION
	PERCENT OF AGENCIES	PERCENT OF AGENCIES	PERCENT OF AGENCIES
Weekly	3.7	55.8	0.0
Every month	68.1	34.9	83.3
Every 6 weeks	0.3	0.0	0.0
Every 2 months	18.8	9.3	11.1
Every 3 months	9.1	0.0	5.6
No issue schedule	<u>0.3</u>	<u>0.0</u>	<u>0.0</u>
Total	100.3	100.0	100.0
Valid Cases (n)	298	43	36
Percent Reporting	83.7	12.1	10.1

* More than one type of food delivery system was possible.

delivery; 81.9 percent of the agencies reported they did not issue food instruments more frequently to high risk participants. Less frequent issuance schedules may reduce participant contact with WIC services such as nutrition education or health care service access.

Food Instrument Redemption

For the periods of January through March and June through August, 1984, State agencies were asked to report the percentage of food instruments issued that were redeemed by participants. Data reporting was incomplete for redemption rates for individual participant categories since most States did not compile or report data in that manner. Redemption rates for all participants, however, were complete and credible with the mean redemption for January to March and for June, 1984 at 93 percent with a standard deviation of 6. For July and August, 1984, redemption rates were slightly lower (92 percent with a standard deviation of 7).

Food Instrument Delivery by Mail and Proxy

Also of interest was the extent that participants did not make personal contact with the WIC agency to obtain food instruments. Proxy pickups (those made by an authorized person such as a spouse or relative) and the frequency of mailing were determined.

Over half (57.9 percent) the 157 local agencies reporting had ten percent or less of their food instruments picked up by a proxy in April, 1984 (Table 3.7.3). And in over 15 percent (16.6 percent) of the agencies, no food instruments were obtained by a proxy.

Only 14.1 percent of the 181 local agencies reporting mailed at least some food instruments to participants in April, 1984 (Table 3.7.4), and no agencies mailed more than 50 percent of their food instruments. It is likely that those agencies mailing food instruments did so because of participant location (e.g., remote areas), illness, or other extenuating circumstances.

Participants receiving food instruments by proxy or mail may have reduced exposure to nutrition education, health, or other WIC services.

TABLE 3.7.3

PERCENTAGE OF FOOD INSTRUMENTS PICKED UP BY PROXY
FROM LOCAL AGENCIES FOR APRIL, 1984

PERCENTAGE OF FOOD INSTRUMENTS PICKED UP BY PROXY	PERCENTAGE OF AGENCIES
NONE	16.6
1 - 10	57.9
11 - 20	10.2
21 - 30	7.7
31 - 40	4.4
41 - 50	1.3
51 - 60	0.6
61 - 70	0.0
71 - 80	0.6
81 - 90	0.0
90 - 100	<u>0.6</u>
Total	99.9
Mean percent of food instruments	10.0
Median percent of food instruments	4.4
Standard Deviation	14.7
Valid Cases (n)	157
Percent Reporting	77.0

TABLE 3.7.4

PERCENTAGE OF FOOD INSTRUMENTS ISSUED THAT WERE
MAILED TO PARTICIPANTS FOR AGENCIES WITH
RETAIL SYSTEM, APRIL 1984

PERCENTAGE OF FOOD INSTRUMENTS MAILED TO PARTICIPANTS	PERCENT OF AGENCIES
NONE	86.2
1 - 10	8.9
11 - 20	0.6
21 - 30	0.6
31 - 40	0.6
41 - 50	<u>3.4</u>
Total	100.3
Mean percent of food instruments mailed	2.2
Median percent of food instruments mailed	0.1
Standard Deviation	9.2
Valid Cases (n)	181
Percent Reporting	88.7

SECTION III: WIC PARTICIPANT RESULTS

CHAPTER 4

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF WIC PARTICIPANTS

Overview

This chapter examines the socio-demographic characteristics of WIC participants, including participant category, age, time of entry into WIC, poverty status, and household size. In addition, the chapter begins with a general discussion of how to interpret the participant characteristics data and their limitations.

Nationally, 51.3 percent of WIC participants were estimated to be children, 25.4 percent were infants, and 23.3 percent were women. More than half the women (53.7 percent) were pregnant. The proportion of children on WIC decreased with age from 35.7 percent for one-year-olds to 16.0 percent for four-year-olds.

Roughly one-seventh of pregnant (14.4 percent) and postpartum women (13.9 percent) were under 18 years of age. This is much higher than the national prevalence of births to teenagers (5.0 percent for all births and 10.9 percent for black births in 1983).

Another issue of concern is how early services are initiated. Pregnant women most often entered WIC during their second trimester (53.2 percent), while 32.0 percent entered during the first trimester, and 14.8 percent entered during the third trimester. About three-quarters of the infants joined WIC within one month after birth.

It was estimated that 18.0 percent of the pregnant women who had been pregnant previously, 93.1 percent of breastfeeding women, and 96.1 percent of postpartum women had been on WIC during previous pregnancies.

Almost half the WIC participants (48.1 percent) were white, another 30.9 percent were black, 17.2 percent were Hispanic, 1.5 percent were American Indian, and 2.2 percent were Asian or Pacific Islanders. The percent of migrants reported was 1.5 percent.

Concerning household size, which was used to determine income poverty levels, the average WIC participant household consisted of 4.1 people, with the largest households being those of the oldest children on WIC.

Based on WIC certification data on income, mostly self-reported, the great majority of WIC participants are poor. Poverty status was examined two ways: (1) based on participants with specific dollar income reported (76.2 percent), and (2) participants with dollar incomes reported combined with those certified on the basis of participation in income-tested programs, such as Food Stamps or AFDC (90.1 percent combined). Based on the first method, 85.5 percent of participants were below 130 percent of poverty. Based on the second method, 87.6 percent were below 130 percent of poverty.

Data on elapsed time between application and certification show that 85.3 percent of WIC participants were certified the same day they applied for program benefits. Only 5.1 percent of WIC participants suffered a delay of more than twenty days before certification. Fewer pregnant women or infants had long delays in certification, but delays were more common in older children.

4.1 Introduction to Participant Characteristics Analyses

This chapter and the following provide results of analyzing WIC participant data. The information was obtained by abstracting data from participant records at the various WIC service sites. Since only 16 - 34 records were abstracted at each site, analyses relied on weighted data so they would be representative of WIC participants nationally. There was no attempt to analyze participant data by service site, local agency, or State, since the data could not be interpreted in that fashion. The data were obtained from a nationally representative sample of participants based on enrollment at a single point in time; thus, the data may not be representative of all WIC participants over a longer time period.

The major methodological problems that were encountered during data collection involved the availability of data, data quality, and definitions of terms. Regarding data availability, a general rule was that data of interest believed to be available in at least 75% of the sites (based on a preliminary data availability assessment) were collected. However, some data of special interest to FNS were collected regardless of the fact that little were available. Data primarily were limited to that reported on certification forms, although clinical forms and growth charts were used to verify or locate hematological and anthropometric data, respectively.

Judgments were made during the data availability assessment regarding data quality as well, and a related issue involved the definitions of terms, since lack of standardization across sites and even within sites produced interpretive problems. Since service sites generally developed their own data reporting procedures, using forms that varied from State to State, it was problematic attempting to aggregate data nationally and develop an analysis that would be valid across States. Some data could not be analyzed because of this, while other data had to be interpreted carefully with a number of qualifications being made. The largest problem with which the study had to contend involved this issue of encountering different standards across sites and observing differences in the way data were recorded in participant records.

WIC records from which data were abstracted had the limitations of variable reporting, ambiguities, and lack of standard reporting procedures. Even when reporting standards existed, it was found that individual staff frequently recorded data differently. For example, to expedite certification, some staff recorded only the most important nutritional risk factor that would result in the highest priority being given to a potential participant, while other staff recorded all risk factors that existed.

Given problems of item nonresponse, judgment is required in interpreting the data. In general the higher the percent responding to an item the more reliable the data should be. The nature of the types of questions affect the types of bias which missing data introduce. Sometimes missing data are genuinely missing, sometimes they are negative; for example, if a box only is to be checked if a person is on the Food Stamp Program, if it is not checked it may mean the person is not on the program (negative), or it may mean that the interviewer did not ask the question (really missing). The report will attempt to assess the expected degree of bias.

Data abstracted from participant records included information about socio-demographics, certification, nutritional risk factors, medical and obstetric history, food package issuance, nutrition education (analyzed in a separate report), and related characteristics.

4.2 Participant Categories

All WIC participants were categorized on the basis of their WIC status at the time of data abstraction. Thus, children were either one, two, three, or four years old at the time of site visit, infants were less than 12 months of age, pregnant women either were pregnant or up to six weeks postpartum, breastfeeding women still were breastfeeding, and postpartum women were within six months postpartum.

Some sites allowed infants to remain classified as infants beyond the age of 12 months. The reason was that since six months were allowed between certifications, and an infant last certified on or after the age of 7 months could remain in the infant category until 13 - 17 months of age, as a result. Approximately 4 percent of the one-year-olds in the sample still were improperly classified as infants by the agencies. At the age of 12 months, all infants received child food packages, and the contents of the food package frequently were listed in their WIC file; however, anthropometric and certification data sometimes remained from the previous infant certification. Conducting analyses using part infant and part child data would have led to false conclusions, which is why these cases had to be eliminated.

The weighted distribution of WIC participants is provided in Table 4.2.1, and a graphic representation of the data is presented in Figure 4.2.1. This table provides caseload estimates for September, 1984, including the percent of WIC participants who were in each of the eight participant categories.

Children comprised slightly more than half the number of WIC participants (51.3 percent), while women (pregnant, breastfeeding, and postpartum combined) and infants were almost equally represented (23.3 percent and 25.4 percent, respectively).

Among the women, those who were pregnant represented more than half (53.7 percent), while those who were breastfeeding were least represented among the women (16.3 percent). Among children, the level of participation decreased with age, there being more than twice as many one-year-olds as there were four-year-olds on WIC.

4.3 Age at Certification

Date of birth, date of initial certification, date of current certification, and date of data abstraction all were recorded for each WIC participant. The date of initial certification was the date on which the participant was first certified in his current participant category. So, for example, a child who was on WIC as an infant would have the date recorded on which he first was certified as a one-year-old child. This would be the date of initial certification.

Date of current certification was the date recorded in the participant file when the person last became certified. Information from that certification form was used to establish current WIC participant categories and adult age.

Date of data abstraction was used to classify children by age, to the nearest month. Thus, a person who may have been a two-year-old at last

TABLE 4.2.1.

ESTIMATED NATIONAL WIC PARTICIPATION BY PARTICIPANT CATEGORY AND AGE GROUP AT TIME OF CURRENT CERTIFICATION.*

PARTICIPANT CATEGORY	ESTIMATED PERCENT IN CATEGORY**	ESTIMATED PERCENT TOTAL WIC POPULATIONS	ESTIMATED WIC PARTICIPATION§§
<u>Women</u>			
Pregnant	53.7		
< 18 Years Old	14.4		55,437
18+ Years Old	85.6		329,543
Total Pregnant	100.0	12.5	384,981
Breastfeeding	16.3		
< 18 Years Old	3.0		3,511
18+ Years Old	97.0		113,523
Total Breast- feeding	100.0	3.8	117,034
Postpartum	30.0		
< 18 Years Old	13.4		28,476
18+ Years Old	86.6		184,034
Total Postpartum	100.0	6.9	212,510
Total Women	100.0	23.3	717,605
<u>Women</u>			
< 18 Years Old	12.2		87,548
18+ Years Old	87.8		630,057
TOTAL WOMEN	100.0	23.3	717,605
<u>Infants</u>			
1 - 3 Months Old	46.6		364,543
4 - 12 Months Old	53.4		417,739
TOTAL INFANTS	100.0	25.4	782,282
<u>Children</u>			
Age 1	35.7	18.3	563,613
Age 2	28.0	14.4	443,498
Age 3	20.2	10.4	320,304
Age 4	16.0	8.2	252,548
Total Children	100.0	51.3	1,579,963
TOTAL CHILDREN		51.3	1,579,963
TOTAL PARTICIPANTS		100.0	3,079,850

*Participation is based on weighted caseloads at the time of the study -- August - December, 1984.

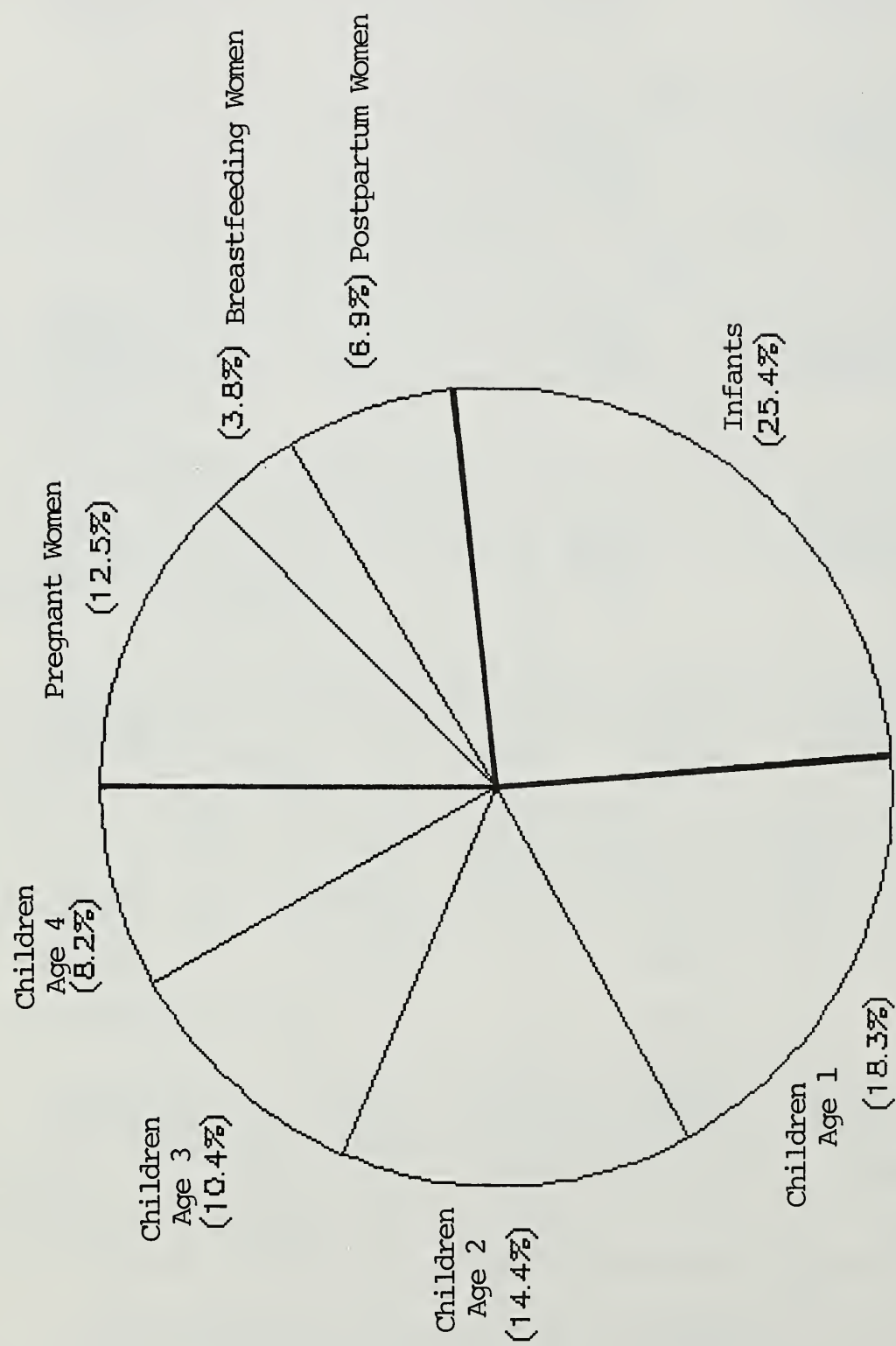
**Percent of women who are pregnant, breastfeeding, or postpartum women; percent of infants and children in each age group; percent of pregnant, breastfeeding, or postpartum women in each age category.

§Percent of each participant category, including total women, infants, and children, in the total WIC population.

§§Total Participants based on September, 1984 FNS participation data.

Participation by category were determined by multiplying estimated proportion of population by total participant caseload for September, 1984. Numbers do not add to totals due to rounding.

FIGURE 4.2.1
 NATIONAL LEVEL
 PERCENT OF PARTICIPANTS



certification may have been a three-year-old at the time of data abstraction. The reason for not using age at current certification in establishing the age of children was that a more complicated and time-consuming process would have been required to determine age by subtracting various dates of birth from various dates of certification.

Current Certification

The ages of the various participants at the time of current certification are presented in Table 4.3.1. About one-seventh of WIC pregnant (14.4 percent) and postpartum (13.4 percent) women were teenagers under 18 years old. The national prevalence of births to women under 18 is much lower -- 5.0 percent for all U.S. births and 10.9 percent for black births, based on 1983 vital statistics reported by the National Center for Health Statistics.

Breastfeeding women in WIC tended to be older, which is consistent with other research indicating breastfeeding women generally are older, better educated, more commonly married, et cetera.

Children's ages ranged from under one year of age to five years of age. This appears to be an unlikely range, since children by definition must be at least one-year-old but less than five-years-old; however, since children in the various age groups were categorized on the basis of their age at time of data abstraction, it is clear that some one-year-olds would be less than age one at their last certification. Likewise, some two-year-olds would be one, some three-year-olds would be two, and some four-year-olds would be three at their last certification. For the few cases where children were classified as one year older than their actual age, the difficulty lies with the method of approximation used to determine age -- anyone with a birth date during the month of data abstraction was moved into the next age category, while the determination of actual age was calculated by subtracting the date of birth from date at certification and rounding to the nearest month. Thus, it is possible for someone who was just certified or recertified to be categorized as age three because their birthday would be the month after data abstraction, while a more accurate calculation of age would move them into the age four category if their birthday were to occur within the next two weeks. More specifically, a person born September 5, 1981 who was certified August 25, 1984 and whose record was abstracted August 28, 1984 would be classified as a two-year old, while an age calculation would make the person a three-year-old.

Regarding infants, the age at time of current certification ranged from certification prior to birth, as was the case at some agencies that certify an infant when the pregnant mother has reached her expected date of delivery (whether she has delivered or not), to certification on or after 12 months of age. As noted earlier, some infants will maintain an infant classification beyond 12 months of age if they were certified or recertified as an infant after six months of age. Most infants (56.0%) were last certified by the time they were five months old, and most of those initially were certified at birth or within one month after. For such participants current and initial certifications dates would be the same.

Initial Certification

Table 4.3.2 presents the age distribution at the time of initial certification. Note that pregnant and postpartum women are certified only

TABLE 4.3.1
AGE DISTRIBUTION AT CURRENT CERTIFICATION*

AGE (YEARS)	W O M E N					
	PREGNANT		BREASTFEEDING		POSTPARTUM	
	%	Cum %	%	Cum %	%	Cum %
<18 Teenagers	14.4	14.4	3.0	3.0	13.4	12.2
18 - 20	26.2	40.6	16.3	19.3	28.7	25.3
21 - 23	20.0	60.6	20.4	39.7	23.6	21.1
24 - 26	16.6	77.2	22.2	61.9	17.3	17.7
27 - 29	7.9	85.1	14.4	76.3	7.5	8.8
30 - 32	8.1	93.2	10.5	86.8	5.4	7.7
33 - 35	3.8	97.0	7.2	94.0	2.2	3.9
36 - 38	2.4	99.4	3.8	97.8	1.3	2.3
39 +	0.6	100.0	2.2	100.0	0.6	0.9
Percent Reporting	99.4		99.9		99.9	99.6

AGE (MONTHS)	INFANTS	
	%	Cum %
Prior to Birth	0.1	0.1
Birth	16.3	16.4
1	20.5	36.9
2	7.8	44.7
3	1.9	46.6
4	2.0	48.6
5	7.4	56.0
6	19.3	75.3
7	13.9	89.2
8	5.4	94.6
9	3.0	97.6
10	1.2	98.8
11	0.6	99.4
12 +	0.6	100.0
Median	5.0	
Mean	4.0	
Standard Deviation	3.1	
Percent Reporting	99.8	

AGE (YEARS)	C H I L D R E N					
	Age 1		Age 2		Age 3	
	%	Cum %	%	Cum %	%	Cum %
< 1	5.1	5.1				1.8
1	94.7	99.8	28.1	28.1		41.8
2	0.2	100.0	71.8	99.9	25.5	25.3
3					74.1	19.5
4					0.4	11.6
5						0.0
% Reporting	99.6		99.1		97.8	98.9

* % = Simple Frequency Percent, Cum % = Cumulative Frequency Percent.

TABLE 4.3.2.
AGE AT INITIAL CERTIFICATION BY PARTICIPANT CATEGORY*

AGE (YEARS)	BREASTFEEDING		CHILDREN					INFANTS	
	WOMEN		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	AGE (MONTHS)	% Cum %
	%	Cum %	%	%	%	%	%		
<1			9.7	3.2	2.1	0.8	4.9	Prior to Birth	0.1
1			90.3	83.8	56.2	44.2	74.3	Birth	38.1
2			0.0	13.0	30.8	17.5	12.6	1	35.1
3			0.0	0.0	10.9	24.2	6.1	2	13.9
4			0.0	0.0	0.0	13.2	2.1	3	2.5
Total			100.0	100.0	100.0	99.9	100.0	4	4.9
<18 (Teenagers)	3.2	3.2						5	2.2
18 - 20	16.2	19.4						6	0.9
21 - 23	21.1	40.5						7	1.0
24 - 26	22.0	62.5						8	0.9
27 - 29	14.7	77.2						9	0.4
30 - 32	9.8	87.0						10	0.1
33 - 35	7.0	94.0							
36 - 38	3.7	97.7							
39 +	2.2	100.0							
Median	24.0		1.0	1.0	1.0	2.0	1.0	Median	0.8
Mean	25.5		0.9	1.1	1.5	2.0	1.3	Mean	1.3
Standard Deviation	5.5		0.3	0.3	0.7	1.1	1.7	Standard Dev.	1.7
% Reporting	99.8		100.0	99.8	99.7	100.0	99.8	% Reporting	99.8

* % = Simple Frequency Percent, Cum % = Cumulative Frequency Percent.

once, so the initial and current certification dates are one of the same. Therefore, to prevent confusion during data analysis, certification dates for these two groups were classified as current certification dates, and no initial certification dates were listed.

The age distribution for breastfeeding women at initial certification is very similar to the age distribution at current certification (Table 4.3.1). For children, one can get an idea of length of participation by noting when children first came into the program. It should be clarified, however, that these dates were when they first were certified as a child, not as an infant, since many were on WIC during infancy. The 9.7% of one-year-olds who were certified initially before their first birthday indicates children who may have been so close to their first birthday when they initially became certified (or became recertified after an earlier infant certification) that they were classified as a child before actually qualifying as one.

The age at initial certification for infants gives more useful information than age at current certification. From Table 4.3.2 it is clear that almost three-fourths of all infants on WIC (73.3 percent) were certified within one month of their birth. Very few were pre-certified before birth (0.1 percent), and only 3.2 percent were certified after the fifth month. Thus, most infants who qualify are getting certified as early as possible.

4.4 Entry and Past WIC Participation

It was just discussed above that most infants are entering the WIC program within one month after birth. A related question concerns how early pregnant women gain entry.

Gestation at Certification for Pregnant Women

While little data were available on the number of weeks gestation at time of certification for pregnant women, expected dates of delivery (EDDs) were reported routinely. Using the EDD and subtracting 270 days gestation gave an estimated date of conception, and calculating the time between estimated conception and initial certification produced an estimate of weeks gestation at certification. It should be mentioned that the EDDs are not necessarily exact -- they are calculated by various means, most commonly on the basis of the last menstrual period. While not necessarily the best method of estimating the date of conception, it should be roughly representative. Table 4.4.1 displays the distribution of weeks gestation and a summary of trimester at time of certification for pregnant women. The first trimester was defined as entering before the 14th week, second trimester was defined as entering between the 14th and 26th week, and third trimester was defined as entering after the 26th week. Most women entered WIC during their second trimester (53.2 percent), with the fewest entering during their third trimester (14.8 percent).

In terms of weeks gestation, 61.5% of the pregnant women entered WIC when they were between 11 and 22 weeks pregnant, with the 11 to 16 week gestation period accounting for the greatest number of enrollments. While relatively few women entered the WIC program when they were 10 weeks pregnant or earlier, it should be kept in mind that pregnancy often is not confirmed until six to eight weeks gestation. Comparing these figures with national data on the date prenatal care began, it appears that prenatal

TABLE 4.4.1

WEEKS GESTATION AND TRIMESTER AT INITIAL CERTIFICATION FOR PREGNANT WOMEN

GESTATION MEASURE	PERCENT	CUMULATIVE PERCENT
<u>WEEKS GESTATION</u>		
≤ 4	0.8	0.8
5 - 7	5.0	5.8
8 - 10	9.1	14.9
11 - 13	17.3	32.2
14 - 16	21.3	53.5
17 - 19	12.0	65.5
20 - 22	10.9	76.4
23 - 25	7.3	83.7
26 - 28	5.4	89.1
28 - 31	5.0	94.1
32 - 34	2.1	96.2
35 - 37	3.4	98.6
38 - 40	0.1	99.7
41 +	0.1	99.8
Median	15.8	
Mean	17.6	
Standard Deviation	7.4	
Percent Reporting	99.2	
<u>TRIMESTER</u>		
1	32.0	32.0
2	53.2	85.2
3	14.8	100.0
Median	1.8	
Mean	1.8	
Standard Deviation	0.7	
Percent Reporting	99.9	

services usually began earlier than WIC participation. In 1983, for all U.S. births 76.2 percent began prenatal services in the first three months, while 61.5 percent did likewise in the case of black births (NCHS vital statistics).

Participation During Previous Pregnancies

Data were collected on participation in WIC during previous pregnancies. The findings showed that 66.2 percent of all women had been on WIC during previous pregnancies, with 41.4 percent of currently pregnant women, 93.1 percent of breastfeeding women, and 96.1 percent of postpartum women so reporting. It appears that almost all the breastfeeding and postpartum women were on WIC during their preceding pregnancy.

The issue of participation in WIC during previous pregnancies is not applicable to the 12.4 percent of pregnant women who did not have a previous pregnancy. Also, as no information about previous WIC participation or previous pregnancies was available for 65.5 percent of the pregnant women, some further refinements in estimation may be useful. First, if the 12.4 percent are eliminated who had not been pregnant previously, 16.3 percent of pregnant women who had been pregnant were on WIC previously. If it is assumed that 12.4 percent of the 65.5 percent missing data also represented women who had not been pregnant previously, then it can be estimated that 18.0 percent of pregnant women had been pregnant before and were on WIC. This appears to be a logical assumption for determining a more accurate estimate of prior participation.

Mother on WIC During Pregnancy

Regarding infants, with data on 75.5 percent it was found that 86.1 percent had a mother on WIC during the mother's pregnancy. It appears, then, that most pregnant women do enter their infants into the WIC program. However, this estimate may be high since data are more likely to be missing if the mother was not on WIC during pregnancy.

Children on WIC as Infants

Among children, 92.9 percent were on WIC as infants (70.7 percent reporting), with infant participation decreasing from 95.9 percent for one-year-olds, to 94.1 percent for two-year-olds, to 87.5 percent for three-year-olds, and to 84.9 percent for four-year-olds. Data reporting also dropped off with age from 90.4 percent for one-year-olds to 46.3 percent for four-year olds. As above, these estimates are high since missing data are more likely to represent children not certified as infants. A future follow-up will more fully examine average duration of WIC participation.

4.5 Racial/Ethnic and Migrant Status

The racial distribution of WIC participation is reported in Table 4.5.1. This information also is collected routinely by WIC agencies, and these data appear to be quite comparable. As seen from the table, slightly less than half the WIC participants are white (48.1%), 30.9 percent were black, and 17.2 percent were Hispanic. The greatest differences between race categories appears for breastfeeding women, approximately 60 percent of whom were white, and only 18 percent of whom were black. Breastfeeding, therefore, appears to be far less common among blacks than would have been expected based on their relative participation in the WIC program.

TABLE 4.5.1

RACIAL DISTRIBUTION OF WIC PARTICIPANTS BY PARTICIPANT CATEGORY (PERCENT)

RACE	WOMEN			INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
White	45.6	60.5	39.7	44.1	47.9	52.0	53.3	52.7	50.9	48.1
Black	33.0	18.3	31.9	30.4	35.5	29.2	28.5	29.7	31.4	30.9
Hispanic	18.4	18.3	23.7	21.2	13.8	15.0	13.9	12.9	14.0	17.2
American Indian	1.9	1.4	2.7	1.1	1.2	1.2	2.0	2.1	1.5	1.5
Asian/Pacific Islander	1.1	1.3	2.0	3.3	1.6	2.5	2.2	2.6	2.1	2.2
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	99.8	100.0	100.1	100.0	99.9	99.9	100.0	99.9	99.9
Percent Reporting	99.6	99.4	98.9	97.1	99.9	100.0	100.0	99.9	99.9	98.9

For children, the increase in the percent of whites and decrease in the percent of Hispanics compared to other participant categories were greater than expected. The racial distribution of infants is similar to that of the pregnant and postpartum women categories, and this would have been predicted if one assumes that most pregnant women on WIC eventually enroll their infants in WIC -- the racial pattern would be similar for mother and her infant. The picture changes for children, however, so it would appear that a new pool of children joined the program whose mothers never were enrolled, and fewer of them are Hispanic. Another possible explanation is that there has been a racial shift over the past several years with more Hispanic women joining the program recently. FNS data seem to dispute this latter explanation, since the racial distribution has been relatively constant over the past few years.

Data on family migrant status generally were available, and findings are presented in Table 4.5.2. Overall, only 1.5% of WIC participants were migrants, mostly women. If it is assumed that non-respondents were non-migrants since migrant data are supposed to be reported, then the proportion of WIC participants who are migrants would drop even lower.

4.6 Gender

The distribution based on gender is reported for infants and children in Table 4.6.1. Women on WIC were eliminated from the table since reporting 100% females in each category would not provide any new information.

Slightly more male infants and children were on WIC than females (52.9 percent compared to 47.1 percent, respectively), and the differences between age categories generally were slight. Four-year-olds did show an increase in males compared to females, however (57.1 percent compared to 42.9 percent).

4.7 Household Size

As shown in Table 4.7.1, the mean household size was 4.1 people. Households for pregnant women tended to be smaller (mean 3.3 people), which is not surprising since pregnant women are counted as one person generally. Households of child participants, particularly older ones, tended to be a little larger (mean of 4.6 for 3- and 4-year-olds).

A very small share of postpartum women, breastfeeding women, infants and children were reported as households of one. This is odd, since normally two would be the minimum expected household size. This may represent rare cases in which mothers and children are separated; for example, foster children may be considered as households of one in determining income eligibility according to WIC policy. Alternatively, these may include minor reporting errors.

4.8 Income and Poverty Status

Income data are required as an essential component of determining WIC eligibility, since all WIC participants must have annual incomes of 185 percent poverty or less. Some States have set more restrictive income requirements. Income and poverty data are derived from certification data, which probably are most often self-reported.

TABLE 4.5.2
FAMILY MIGRANT STATUS BY PARTICIPANT CATEGORY (PERCENT)

MIGRANT STATUS	WOMEN			INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTIUM		1	AGE 2	AGE 3	AGE 4	TOTAL	
Migrant	2.3	0.2	4.2	1.0	0.8	1.7	1.4	0.7	1.2	1.5
Non-Migrant	97.7	99.8	95.8	99.0	99.2	98.3	98.6	99.3	98.8	98.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percent Reporting	80.6	85.0	76.5	82.2	76.4	79.3	79.9	79.2	78.2	79.6

TABLE 4.6.1

DISTRIBUTION OF INFANTS AND CHILDREN ON WIC BASED ON GENDER (PERCENT)

GENDER	INFANTS	CHILDREN				TOTAL INFANT & CHILD PARTICIPANTS
		AGE 1	AGE 2	AGE 3	AGE 4	
Male	53.1	51.3	51.9	53.4	57.1	52.9
Female	46.9	48.7	48.1	46.6	42.9	47.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Percent Reporting	99.4	100.0	99.9	100.0	100.0	99.8

TABLE 4.7.1
DISTRIBUTION OF HOUSEHOLD SIZE BY PARTICIPANT CATEGORY.*

NUMBER IN HOUSEHOLD	WOMEN							
	PREGNANT		BREASTFEEDING		POSTPARTUM		TOTAL	
	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %
1	16.0	'16.0	0.5	'0.5	0.2	'0.2	8.7	'8.7
2	22.4	'38.4	10.6	'11.1	15.0	'15.2	18.3	'27.0
3	21.5	'59.9	33.8	'44.9	30.7	'45.9	26.3	'53.3
4	19.8	'79.7	25.9	'70.8	25.7	'71.6	22.6	'75.9
5	6.9	'86.6	12.1	'82.9	16.9	'88.5	10.7	'86.6
6	6.5	'93.1	11.4	'94.3	5.4	'93.9	7.0	'93.6
7 +	6.9	'100.0	5.6	'99.9	6.1	'100.0	6.4	'100.0
Median	3		4		4		3	
Mean	3.3		4.1		4.0		3.6	
Standard Deviation	2.0		1.8		1.8		1.9	
Percent Reporting	95.5		96.9		97.7		96.4	

TABLE 4.7.1 (CONTINUED)

NUMBER IN HOUSEHOLD	CHILDREN												TOTAL PARTICIPANT %	
	INFANTS		AGE 1		AGE 2		AGE 3		AGE 4		TOTAL			
	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %
1	1.3'	1.3'	0.1'	0.1'	0.8'	0.8'	0.1'	0.1'	0.3'	0.3'	2.5'	2.5'	2.5'	2.5'
2	18.9'	20.2'	12.5'	12.6'	14.8'	15.6'	7.4'	7.5'	5.2'	10.9'	14.7'	14.7'	14.7'	17.2'
3	24.8'	45.0'	24.8'	37.4'	22.9'	38.5'	20.0'	27.5'	18.0'	23.5'	23.8'	23.8'	23.8'	41.0'
4	26.1'	71.1'	28.5'	65.9'	29.3'	67.8'	32.7'	60.2'	31.9'	55.4'	27.3'	27.3'	27.3'	68.3'
5	13.3'	84.4'	17.9'	83.8'	16.7'	84.5'	16.8'	77.0'	22.2'	77.6'	15.1'	15.1'	15.1'	83.4'
6	8.3'	92.7'	7.8'	91.6'	6.4'	90.9'	9.4'	86.4'	9.8'	87.4'	7.9'	7.9'	7.9'	91.3'
7 +	7.3'	100.0'	8.4'	100.0'	9.1'	100.0'	13.6'	100.0'	12.6'	100.0'	8.6'	8.6'	8.6'	99.9'
Median	4		4		4		4		4		4		4	
Mean	4.0		4.3		4.1		4.6		4.6		4.3		4.1	
Standard Deviation	1.9		1.9		1.7		1.9		1.8		1.8		1.8	
Percent Reporting	97.4		96.3		96.7		97.4		98.0		96.9		96.9	

* % = Simple Frequency Percent, Cum % = Cumulative Frequency Percent

Based on Federal poverty guidelines effective July 1, 1984 - June 30, 1985, the federal poverty level was set at an annual income of \$4,980 for a household of one. An additional \$1,740 annually was allowed for each additional family member to remain at the Federal poverty income level -- considered 100 percent poverty. FNS income guidelines of 185 percent poverty would be the equivalent of an annual income of \$9,213 for a household of one, with an additional \$3,219 being allowed for each addition a household member. Thus, incomes of as much as \$18,870 would qualify a person for WIC if he or she came from a household of four in the conterminous United States.

Income data were reported two ways. First, Table 4.8.1 indicates the percent poverty distribution of all WIC participants whose income is shown in actual dollar amounts. This yielded 76.2 percent reporting. Then, Table 4.8.2 presents the percent poverty level for people with reported incomes and includes people certified on the basis of participation in AFDC, Food Stamps, and Medicaid as having less than or equal to 130 percent poverty if no dollar income values were reported. This increased combined reporting to 90.1 percent. It should be noted that in rare cases participants in one of these assistance programs may have incomes greater than 130 percent of poverty. For example, although the Food Stamp Program gross income is limited to 130 percent of poverty for most households, it may be exceeded for households with elderly members. For analytic purposes, however, it is a fairly safe assumption that these people generally can be categorized below 130 percent of poverty.

In general, most WIC participants fell into the 130 percent of poverty or below category (85.5 - 88.2 percent, depending upon which table is used). The few who were in the more than 185 percent poverty category probably represented rounding or calculation adjustments that artificially placed them there rather than at 185 percent of poverty. The discrepancies in the two methods of assessing poverty status were small and lends confidence in the more specific poverty data from the smaller sample with dollar income levels specified.

Some words of caution should be offered regarding interpretation of Tables 4.8.1 and 4.8.2. It was noted that 3.1 percent of the participants (Table 4.8.1) indicated they had no (zero) income. It is unlikely that many people actually had no income. More likely they had no income for the past month or two, or they did not count gifts from friends and relatives or earnings from periodic odd jobs. Therefore, "zero income" should be interpreted to mean the person had very low income, definitely placing them in the lowest income category.

State and local agencies set poverty level criteria utilized to assess a prospective WIC participant's income eligibility. Among the WIC participants, approximately three-fourths resided in States and attended local agencies where 185 percent poverty was the maximum allowable income to establish eligibility. Almost all the remaining States and local agencies set a limit in the 131 - 150 percent poverty level range. Based on individual participant categories, more than 40 percent of postpartum women but fewer than 25 percent of the children participated in WIC programs in States and local agencies that set 131 - 150 percent poverty as the limit that could not be exceeded. There may not be much significance to this finding since the poverty level income distribution of WIC participants from Table 4.8.2 indicates that approximately 94 percent of all participants qualified at below the 150 percent poverty level, and this was true for each category of participant as well.

TABLE 4.8.1.
POVERTY STATUS FOR REPORTED INCOMES BY PARTICIPANT CATEGORY*

PERCENT OF POVERTY	WOMEN							
	PREGNANT		BREASTFEEDING		POSTPARTUM		TOTAL	
	%	Cum %	%	Cum %	%	Cum %	%	Cum %
0	6.8	6.8	2.5	2.5	4.6	4.6	5.4	5.4
1 - 50	28.1	34.9	16.5	19.0	33.8	38.4	27.9	33.3
51 - 100	31.8	66.7	33.3	52.3	45.5	83.9	36.1	69.4
101 - 130	18.6	85.3	24.3	76.6	7.8	91.7	16.3	85.7
131 - 150	7.3	92.6	10.5	87.1	3.5	95.2	6.7	92.4
151 - 185	6.7	99.3	12.3	99.4	4.6	99.8	7.0	99.4
186 +	0.6	99.9	0.5	99.9	0.2	100.0	0.5	99.9
Median	75.5		94.4		61.6		74.4	
Mean	77.1		94.9		65.2		76.4	
Standard Deviation	46.8		44.8		40.3		44.5	
Percent Reporting	72.1		77.0		82.0		75.9	

TABLE 4.8.1 (CONTINUED)

PERCENT OF POVERTY	CHILDREN																		TOTAL WIC PARTICIPANTS		
	INFANTS			AGE 1			AGE 2			AGE 3			AGE 4			TOTAL					
	%	Cum %		%	Cum %		%	Cum %		%	Cum %		%	Cum %		%	Cum %		%	Cum %	
0	4.5	4.5		1.9	1.9		1.5	1.5		1.1	1.1		0.6	0.6		1.4	1.4		3.1	3.1	
1-50	27.7	32.2		32.1	34.0		39.2	40.7		33.2	34.3		34.0	34.6		34.6	36.0		31.3	34.4	
51-100	37.3	69.5		37.1	71.1		35.2	75.9		33.9	68.2		34.5	69.1		35.5	71.5		36.1	70.5	
101-130	14.4	83.9		17.3	88.4		10.5	86.4		16.0	84.2		14.9	84.0		14.8	86.3		15.0	85.5	
131-150	7.2	91.1		6.1	44.5		7.9	94.3		7.3	91.5		8.8	92.8		7.3	93.6		7.1	92.6	
151-185	8.0	99.1		5.5	100.0		5.3	99.6		8.1	99.6		7.1	99.9		6.2	99.8		6.8	99.4	
186 +	1.1	100.2		0.0	100.0		0.3	99.9		0.4	100.0		0.1	100.0		0.2	100.0		0.5	99.9	
Median	75.7			66.5			61.1			73.6			70.0			67.4			71.1		
Mean	75.7			74.3			71.5			79.5			79.0			75.3			75.7		
Standard Deviation	46.3			45.5			42.5			47.2			43.0			43.7			44.5		
Percent Reporting	79.4			76.0			72.8			75.1			74.3			74.7			76.2		

* % = Simple Frequency Percent, Cum % = Cumulative Frequency Percent. The distribution in this table is based on reported incomes only -- participation in public assistance programs was not used to establish poverty level categories.

TABLE 4.8.2
DISTRIBUTION OF POVERTY LEVEL BY PARTICIPANT
CATEGORY FOR THOSE QUALIFYING FOR WIC*

PERCENT OF POVERTY	WOMEN					
	PREGNANT		BREASTFEEDING		POSTPARTUM	
	%	'Cum %	%	'Cum %	%	'Cum %
0% - 130%	88.0	88.0	80.3	80.3	92.8	88.2
131% - 150%	6.0	94.0	8.9	89.2	3.0	93.8
151% - 185%	5.5	99.5	10.4	99.6	4.0	99.8
> 185%	0.5	100.0	0.5	100.1	0.2	100.0
% Reporting	88.2		91.6		94.0	90.5

PERCENT OF POVERTY	INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
	%	%	%	%	%	%	%
0% - 130%	86.2	86.2	88.6	86.7	86.6	88.4	87.6
131% - 150%	6.1	92.3	6.7	6.1	7.4	6.1	6.0
151% - 185%	6.8	99.1	4.5	6.9	5.9	5.3	6.0
> 185%	0.9	100.0	0.3	0.4	0.1	0.2	0.4
% Reporting	93.3	89.4	86.4	88.8	88.8	88.4	90.1

* % = Simple frequency %, Cum % = Cumulative frequency %. Based on income categorized as percent of poverty, but including as <131% poverty those participants receiving AFDC, Food Stamps, or Medicaid.

The final item examined regarding income was the basis of income eligibility when annual income per se was not used. Table 4.8.3 indicates that 15.1 percent of WIC participants qualified on the basis of participating in at least one of the programs listed. AFDC, Food Stamps, and Medicaid participation were the only ones translated into poverty level amounts since it was clear that to qualify for each a person would have to be at 130 percent poverty or below. Participants rarely reported Social Security and/or State Health Program participation, so eliminating these from a poverty equivalency made little difference. The largest category that was not converted into a poverty level equivalency was Public or General Assistance. The reason for not including this group was that different standards appeared to be used in different States, and it was unclear which programs were included in this category. The "other" category likewise was not converted into a poverty level equivalency since the programs that comprised it and their qualifying incomes were unknown.

4.9 Relationship Between Application and Certification

When a participant applies for WIC enrollment, an application date is recorded however, the definition of application date differs among agencies. Most agencies (51.5 percent) consider the application date to be when the certification process has been completed, so usually it is the same day as the person applies for enrollment. Other agencies consider the application date to be when the certification process is initiated (16.0 percent), or when the first visit to the agency (24.7 percent) occurs. Table 4.9.1 shows the frequency with which the various definitions of application date have been applied to WIC participants. The main differences among participant categories is that pregnant women more frequently were considered to have applied for WIC on their first visit to the agency, while breastfeeding women more frequently are considered to have applied when the certification process has been completed.

The time between application and certification dates was fairly consistent across participant categories (see Table 4.9.2). Approximately 85.3 percent of WIC participants are, in fact, certified on the same day as application. A small percentage (0.6 percent) of participants were certified prior to application. This curious result appeared to be due in part to agency policy that automatically certifies a pregnant women as breastfeeding or postpartum based on her expected date of delivery or actual date of delivery before the woman formally applies in a new participant category. Infants sometimes were certified before birth -- before formal application. Agencies probably undertake this policy because infants born of WIC pregnant women are automatically eligible to participate. Certification before birth is done, based on the expected date of delivery, to have vouchers computer generated and ready to use at birth to provide benefits with the least wait. Infants sometimes were certified as children automatically at their first birthday before application for actual child certification.

Overall, 5.1 percent of participants had more than twenty days between application and certification. The share of participants with delayed certifications was lower for infants and pregnant women and higher for children, especially older children.

TABLE 4.8.3.

BASIS AND USE OF ASSISTANCE PROGRAMS FOR WIC INCOME ELIGIBILITY OTHER THAN DOLLAR INCOME, BY PARTICIPANT CATEGORY (PERCENT).

BASIS*	WOMEN			INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
AFDC	1.6	1.7	2.9	1.4	2.1	2.1	0.8	1.2	1.6	1.6
Food Stamps	5.5	7.3	4.5	6.6	7.5	7.5	7.4	6.9	7.4	6.8
Medicaid	7.9	8.7	6.2	5.0	8.1	9.3	7.7	9.3	8.5	7.4
Social Security	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.1	0.1
State Health Program	0.1	0.1	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.1
Public or General Assistance	9.3	8.1	3.7	5.9	8.3	10.2	8.6	7.5	8.8	7.7
Other	1.4	1.0	1.1	0.6	0.3	1.2	1.1	0.3	0.7	0.8
Percent Reporting	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
USE OF ASSISTANCE PROGRAM PARTICIPATION AS BASIS OF INCOME ELIGIBILITY										
Yes	16.8	14.3	10.6	11.6	15.7	19.1	16.3	17.7	17.1	15.1
No	83.2	85.7	89.4	88.4	84.3	80.9	83.7	82.3	82.9	84.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percent Reporting	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* "Basis" categories are not mutually exclusive -- can participate in more than one.

TABLE 4.9.1
BASIS OF APPLICATION BY PARTICIPANT CATEGORY (PERCENT)

BASIS OF APPLICATION DATE	WOMEN			INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
First call to WIC	3.1	2.9	1.6	1.9	1.9	1.8	2.3	0.7	1.7	2.1
First visit to WIC	32.2	19.6	24.0	26.1	18.0	22.0	27.3	28.3	22.7	24.7
Date certification process initiated	15.6	10.3	20.5	14.1	17.3	16.0	17.1	17.6	16.9	16.0
Date certification process completed	42.7	62.9	47.7	51.8	58.6	54.0	48.9	44.8	53.1	51.5
Other	6.4	4.3	6.3	6.1	4.3	6.2	4.4	8.5	5.6	5.8
Total	100.0	100.0	100.1	100.0	100.1	100.0	100.0	99.9	100.0	100.1
% Reporting	90.5	80.1	87.0	91.4	83.9	83.8	82.9	88.8	84.3	86.9

TABLE 4.9.2
TIME BETWEEN WIC CERTIFICATION AND APPLICATION BY PARTICIPANT CATEGORY (PERCENT)

CERTIFICATION	WOMEN				INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
Before application date	0.4	0.9	0.4	0.5	1.1	0.4	0.2	0.3	1.0	0.4	0.6
Same day as application date	82.6	87.2	86.2	84.4	87.3	85.6	83.9	86.2	82.1	84.7	85.3
After application date (days):											
1 - 5	4.7	3.1	3.7	4.1	2.7	3.2	1.4	2.4	3.1	2.6	3.0
6 - 10	4.2	1.2	1.6	2.9	2.3	1.0	6.2	1.3	1.1	2.6	2.6
11 - 15	3.1	1.2	1.7	2.4	3.3	0.8	2.8	1.0	1.3	1.5	2.2
16 - 20	1.0	0.9	1.4	1.1	0.7	3.3	1.0	0.9	1.4	1.8	1.4
21 - 25	1.0	0.7	2.0	1.3	0.6	0.8	1.4	0.9	1.9	1.2	1.1
26 - 30	0.5	0.5	0.7	0.6	0.6	1.1	0.8	1.4	3.3	1.5	1.1
31 - 60	2.2	0.7	0.6	1.5	1.0	2.3	1.4	1.9	3.7	2.3	1.8
61+	0.3 17.0	3.8 11.9	1.7 13.4	1.3 15.1	0.4 11.6	1.1 14.0	0.7 15.9	3.3 13.5	1.0 16.9	1.4 14.9	1.1 11.4
Total	100.0	100.2	100.0	100.1	100.0	99.6	99.8	99.6	99.9	99.7	99.9
Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	2.6	4.8	4.9	3.6	1.2	4.9	3.6	6.1	2.9	4.5	3.5
Standard Deviation	9.7	22.1	30.4	17.9	16.0	27.6	21.8	32.3	60.0	34.9	26.1
% Reporting	94.6	85.9	90.5	91.9	94.0	85.1	84.8	83.9	89.5	85.2	89.0

CHAPTER 5

NUTRITIONAL RISK CHARACTERISTICS OF WIC PARTICIPANTS

Overview

This chapter examines the nutritional risk and health characteristics of WIC participants, as reported in their records. These include current and initial nutritional risk criteria used in certification, priority levels, and distribution of hematological values. The chapter also includes a discussion on the interpretation of nutritional risk, based on whether single or multiple risks were reported.

In order to be eligible, WIC participants must have nutritional risk as determined by a nutritionist, nurse dietitian or other health professional. A key area of interest was the type of nutritional risks used in certification.

There is a fundamental difficulty in interpreting the prevalence of nutritional risks. About half the participants have only a single risk reported. It is not clear if a single risk is the only risk of the person, the most important risk of many, or the risk first identified and used for expedient certification. Some certification records have space for only one risk while other records have space for many.

About half the participants have more than one risk reported. Similarly, it is not clear if these are all the risks, nor is it even clear that people with multiple risks reported are more at risk than people with single risks reported. Whether a person has single or multiple risks may depend on agency policies, personal health status, and administrative expediency. This study separates data by single risk and multiple risks and also pools them for combined risks. The prevalence of a combined risk is the frequency with which any participant had any risk reported whether single or multiple times.

The study assessed the prevalence of nutritional risks shown in participant records for their current certification. The following summaries are based on the combined prevalence (any risk reported). Overall, the most common classes of risks were medical/health risks (43 percent), dietary risks (38 percent), and anthropometric risks (35 percent). The most common specific nutritional risk conditions were:

Pregnant: Inadequate pregnancy weight gain
History or presence of anemia
Teenage pregnancy
Inadequate nutrient intake
High pre-pregnancy weight for height
Excessive pregnancy weight gain

Breastfeeding: History or presence of anemia
Mother of priority 1 infant
High weight for height
Inadequate nutrient intake

Postpartum: Teenage mother
History or presence of anemia
High weight for height
Inadequate nutrient intake

Infant: Mother on WIC during pregnancy
Inadequate nutrient intake
History or presence of anemia

Children: History or presence of anemia
Low height for age
Prevention of regression
Low weight for height
Inadequate nutrient intake
High weight for height

Most of the participants were in the first three priority levels for their current certification, which are defined by WIC regulations. Almost all the pregnant women and the infants were in the first two priority levels and most of the children were in Priority III. There were modest discrepancies in the distribution of priority levels reported in participant records and as assigned by the study, which are explained by definitional differences and by errors in participant records.

At certification the hemoglobin or hematocrit usually are measured. The study analyzed the distributions directly, using natural reference standards. The assessment of hematological status is complex because of varying tests (hemoglobin versus hematocrit) and standards. Using anemia standards most common among WIC State agencies, the following percentage of participants were anemic: pregnant women 10 to 13 percent, breastfeeding women 28 to 30 percent, postpartum women 32 to 50 percent, infants 31 to 36 percent, and children 17 to 22 percent. Overall, about 22 to 25 percent of WIC participants were anemic using these standards.

5.1 Introduction to Interpretation of Nutritional Risk Criteria

One of the primary areas of interest during this study has been the distribution of nutritional risk factors. A large number of risk factors are used routinely for assigning participants to one of seven priority groups and qualifying them for WIC enrollment. According to FNS regulations, medical and/or nutritional assessment by a qualified professional is required for determining if a person is at nutritional risk. Since this assessment can be conducted by a private professional who refers a client to WIC, supporting data for establishing nutritional risk sometimes are unavailable in the WIC record.

In order to capture the most possible information on nutritional risks, a detailed roster of possible nutritional risk criteria was developed based on a preliminary assessment of types of risk criteria in use, including review of pre-test sites. These are shown in Table 5.1.1. Not all States used these criteria; in fact, the subsequent analyses show that many criteria are rarely used. Further, from area to area some of the risks are defined differently. These data represent the reported basis for certification in the WIC Program.

The three major categories were anthropometric risk which included obesity and pregnancy risk, medical/health risk which included gravida and parity risks as well as pregnancy history risks among others, and dietary/nutritional risks. In addition, five other categories of risks were formulated: mother on WIC during pregnancy (for infants), nutritional risk in the past (e.g., during pregnancy) but not on WIC, other family member on WIC, prevention of regression, and other.

An explanation of several of the categorized risks is necessary in order to understand the tables in this chapter. First, the definition of obesity changed with participant category. For pregnant women, a high pre-pregnancy weight for height was the risk that defined obesity. However, for all women, infants and children, except pregnant women, high weight for height at current certification defined obesity.

Definitions of "gravida" and "parity" are in order for those without health backgrounds. "Gravida" refers to a pregnant woman and is often used in the context of the number of pregnancies a woman has had. "Parity" refers to the number of live births. Thus, a pregnant woman with one earlier miscarriage and one live child has a gravida count of three, but a parity count of one. A prima gravida is a woman with her first pregnancy.

Several categorized risks also were individual risks, but they were given separate category designations so each could be analyzed separately. These included "mother on WIC during pregnancy" (relevant to infants), "nutritional risk in the past (e.g., during pregnancy) but not on WIC," and "prevention of regression."

Another categorized risk, "other family member on WIC," included individual risks that differed according to participant category. For breastfeeding and postpartum women, this category included having priority I or priority II infants on WIC. For infants and children, this risk category included "infant (or child) of currently breastfeeding Priority I mother". For infants only the "infant 0 - 6 months of age of a WIC mother" also was included.

TABLE 5.1.1
CATEGORIZED NUTRITIONAL RISK CRITERIA.

Categorized Risks
Subcategories of Risks
Uncategorized/Individual Risks
<u>Anthropometric Risk</u>
Obesity
High Pre-Pregnancy Weight for Height (for women)
High Weight for Height (except for pregnant women)
Pregnancy Weight Gain Abnormal
Inadequate Pregnancy Weight Gain
Excessive Pregnancy Weight Gain
Low Pre-Pregnancy Weight for Height
Low Height for Age
Low Weight for Age
High Weight for Age
Low Weight for Height
Other Anthropometric Risk
<u>Medical/Health Risks</u>
Alcohol Use/Abuse
Child of Mother With Limited Mental Capacity or Alcohol Drug Abuser
Drug Use/Abuse
Gravida and Parity Risks
Young Gravida (less than 18 years of age)
Older Gravida (greater than 35 years of age)
Older Prima Gravida (greater than 35 years of age)
High Gravida (many pregnancies)
High Parity (many births)
Other Gravida/Parity Risk
Handicapped Child/Congenital Anomaly
History or Presence of Anemia
Hyperemesis
Mentally or Physically Handicapped
Prematurity
Pregnancy History Risks
Short Inter-Conceptual Period
Multiple Fetus Pregnancy (most recent)
History of Negative Birth Outcomes
Obstetric Complications During Pregnancy
Caesarean Section
Other Pregnancy History Risk
Presence of Other Medical Problems/Conditions
Smoking
Other Medical/Health Risk
<u>Dietary Risks</u>
Nutrient Intake Inadequate
Caffeine Intake Excessive
Caloric Intake Excessive
Food Allergies
Food Faddism
Formula Consumption Excessive
Formula Consumption Inadequate
Other Dietary Risk

TABLE 5.1.1 (CONTINUED)

<u>Categorized Risks</u>
Subcategories of Risks
Un-Categorized/Individual Risks
<u>Mother on WIC During Pregnancy (for infants)</u>
<u>Nutritional Risk in the Past But Not on WIC</u>
<u>Other Family Member on WIC</u>
Infant 0 - 6 Months of Age of a WIC Mother Infant of Currently Breastfeeding Priority I Mother Mother of Priority I Infant (breastfeeding & postpartum women) Mother of Priority II Infant (breastfeeding & postpartum women)
<u>Prevent Regression</u>
<u>Other</u>
Infant of Young Mother (mother under age 18) Miscellaneous

A problem in analyzing risk data involved the number of risks reported. Agencies differed both in the number of risks which could be reported and in the manner in which risks were reported. Local agency directors were asked to specify the number of risks which could be reported on their certification forms. Approximately 61 of the 204 local agencies indicated that only the single most important risk criteria was reported. However, when the distributions of the number of risks were analyzed for all the WIC participants in the sample, only 19 local agencies listed only one risk factor for each participant, and in three other local agencies one of the two service sites did likewise. Thus, there was a large discrepancy between reported local agency policy and agency staff practices.

In agencies where all risks are supposed to be reported routinely, staff sometimes recorded only the single most important risk to expedite intake. The risk criterion that resulted in the highest WIC priority ranking was all that was necessary, so some staff did not bother to determine or list additional risks. Four possibilities resulted:

- (1) One risk was listed and the person had only one risk.
- (2) One risk was listed but the person had more than one risk.
- (3) More than one risk was listed and included all participant risks.
- (4) More than one risk was listed but the participant had additional risks.

There was no way to determine which of the above four possibilities applied to any given agency or individual. Therefore, risk analyses involved examining single reported risks, multiple reported risks (two or more reported), and combined risks (single and multiple risks combined, regardless of number specified). For single reported risks, total risks add to 100 percent since each person listed only one. For multiple reported risks and combined risks more than one could be specified, so totals were greater than 100 percent.

Combined risk analysis was chosen when the relationship between risk factors and other variables was of interest. There was an inherent bias in this approach since it included both individuals with single reported risks when additional risks existed (under represented), and individuals with multiple reported risks when every existing risk was listed (over represented). The advantage, however, is that all participants are included in the analyses and all reported data are used. To conduct analyses using only single reported risks would have eliminated the national representativeness of the findings, since only a portion of the sites reported single risks, and none of the secondary risks would have been included in the analyses. To conduct the analyses using multiple reported risks would have eliminated those sites where only one risk was reported, and there still would be no assurances that in the multiple risk situation all risks were reported -- perhaps only the primary two or three risks get reported even though participants may have more

In addition, some of this type of bias is common both to single risk and multiple risk reporting procedures, so a combined risk approach does not introduce much additional bias.

5.2 Current Nutritional Risk Criteria

The number of reported risks varied from site-to-site and from participant-to-participant. Table 5.2.1 indicates that approximately 2.0

TABLE 5.2.1
NUMBER OF CURRENT RISK FACTORS BY PARTICIPANT CATEGORY*

NUMBER OF RISK FACTORS	WOMEN									
	PREGNANT		BREASTFEEDING		POSTPARTUM		TOTAL			
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
1	39.9	39.9	45.6	45.6	49.9	49.9	43.8	43.8		43.8
2	28.4	68.3	33.8	79.4	33.9	83.8	30.9	74.7		74.7
3	18.2	86.5	12.3	91.7	11.0	94.8	15.1	89.8		89.8
4	6.1	92.6	5.4	97.1	2.8	97.6	5.0	94.8		94.8
5	3.8	96.4	2.0	99.1	1.5	99.1	2.8	97.6		97.6
6	1.3	97.7	0.5	99.6	0.7	99.8	1.0	98.6		98.6
7	1.0	98.7	0.4	100.0	0.1	99.9	0.6	99.2		99.2
8	0.6	99.3	0.0	100.0	0.1	100.0	0.4	99.6		99.6
9	0.1	99.4	0.0	100.0	0.0	100.0	0.1	99.7		99.7
10	0.5	99.9	0.0	100.0	0.0	100.0	0.3	100.0		100.0
Median	2		2		2		2			
Mean	2.2		1.9		1.8		2.0			
Standard Deviation	1.5		1.1		1.0		1.3			
% Reporting	100.0		99.9		99.8		99.9			

TABLE 5.2.1 (CONTINUED)

NUMBER OF RISK FACTORS	INFANTS		CHILDREN												TOTAL WIC PARTICIPANTS			
			AGE 1			AGE 2			AGE 3			AGE 4					TOTAL	
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
1	66.3	66.3	57.0	57.0	61.9	61.9	61.3	61.3	68.7	68.7	61.1	61.1	58.4	58.4				
2	24.5	90.8	32.3	89.3	24.3	86.2	24.9	86.2	22.7	91.4	27.0	88.1	27.3	85.7				
3	6.1	96.9	7.4	96.7	11.3	97.5	7.9	94.1	6.1	97.5	8.4	96.5	9.4	95.1				
4	2.4	99.3	2.4	99.1	2.0	99.5	4.3	98.4	1.4	98.9	2.5	99.0	3.1	98.2				
5	0.6	99.9	0.9	100.0	0.3	99.8	1.2	99.6	1.1	100.0	0.8	99.8	1.2	99.4				
6	0.1	100.0	0.0	100.1	0.4	99.8	0.0	100.0	0.1	100.0	0.1	99.9	0.3	99.7				
7	0.1	100.0	0.0	100.1	0.1	99.9	0.0	100.0	0.0	100.0	0.1	100.0	0.2	99.9				
8	0.0	100.0	0.0	100.1	0.0	99.9	0.0	100.0	0.0	100.0	0.0	100.0	0.1	100.0				
9	0.0	100.0	0.0	100.1	0.0	99.9	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0				
10	0.0	100.0	0.0	100.1	0.0	99.9	0.0	100.0	0.0	100.0	0.0	100.0	0.1	100.1				
Median	1		1		1		1		1		1		1					
Mean	1.5		1.6		1.6		1.6		1.4		1.6		1.7					
Standard Deviation	0.8		0.8		0.8		0.9		0.8		0.8		0.9					
% Reporting	99.9		99.6		99.9		99.3		100.0		99.7		99.8					

* % = Simple frequency %, Cum % = Cumulative frequency %

risks were reported on the average for women, while approximately 1.5 risks were reported for infants and children. Overall, 58.4 percent of all participants had only one risk factor listed in their charts, while an additional 27.3 percent had two risks listed. Thus, in less than 15 percent of the cases were three or more risk factors were specified, and it appears that either participants generally have only one or two risk factors or that agencies routinely report only the primary one or two.

Individual and categorized risk factors are presented in Tables 5.2.2 through 5.2.10. Separate single, multiple, and combined risk factor tables are presented for each category of participant. Categorized risks are those that are underlined in Tables 5.2.2 through 5.2.10 and represent the proportion of WIC participants who have one or more of the individual risks that comprise each category. Uncategorized risks are the individual risk factors themselves.

The column labelled single risk in Tables 5.2.2 through 5.2.10 is the percentage distribution of risk factors of WIC participants who had only one reported risk. Multiple risks represent the distribution of risk factors when more than one risk was reported for individuals. And combined risks are the distribution of risk factors regardless whether one or more were reported.

Categorized risk factor totals do not equal uncategorized risk factor totals for multiple and combined risks in Tables 5.2.2 through 5.2.10. The reason is due to the different definitions described above. For example, a pregnant woman who smoked, abused alcohol, and had a history of anemia would be counted only once as having a medical/health risk -- the individual risks in this case have been categorized as medical/health risks. However, the same person would be counted as having three individual, uncategorized risks -- smoking, alcohol abuse, and history of anemia. Data on pregnant women are presented first in Table 5.2.2.

Pregnant Women

Among pregnant women reporting a single risk factor, approximately an equal percentage (approximately 27 percent each) reported an anthropometric or dietary risk, while the greatest percentage (46.4 percent) reported a medical or health risk (see Table 5.2.2). The most prevalent single risk factor was inadequate nutrient intake, which was reported by 26.9 percent of the pregnant women, and it represented all the dietary risks reported. Among the medical/health risks, history or presence of anemia was most often reported (15.7 percent), followed by young gravida -- women under 18 years of age (10.9 percent). Abnormal weight gain during pregnancy was the main anthropometric risk (15.1 percent).

The multiple risk data showed a similar pattern, though with a greater magnitude. Approximately 60 percent of the pregnant women who reported more than one risk factor reported anthropometric risks and an equal percentage reported dietary risks. However, medical/health risks again were more common (79.8 percent).

Reported combined data in Table 5.2.2 again follows the same patterns as for the single and multiple risk reporting, but the frequency is somewhere between the two, with 46.4 percent reporting an anthropometric risk, and approximately one percent more reporting dietary risks. Medical/health risks, on the other hand, were reported by 66.4 percent.

TABLE 5.2.2.2

DISTRIBUTION OF CURRENT NUTRITIONAL RISKS (PERCENT): PREGNANT WOMEN

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Anthropometric</u>	26.6	60.1	46.4
Obesity	6.9	19.2	14.3
High pre-pregnancy weight for height	6.9	19.2	14.3
High weight for height	0.7	1.2	1.0
Weight gain during pregnancy inadequate or excessive	15.1	35.5	27.3
Inadequate pregnancy weight gain	7.8	19.6	14.9
Excessive pregnancy weight gain	7.3	16.0	12.6
Low pre-pregnancy weight for height	3.2	8.1	6.1
Low height for age	NA	NA	NA
Low weight for age	NA	NA	NA
Low birth weight	NA	NA	NA
High weight for age	0.0	0.1	0.0
Low weight for height	0.2	0.8	0.5
Other Anthropometric Risks	0.6	5.2	3.4

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u>	46.4	79.8	66.4
History or presence of anemia	15.7	36.9	28.5
Presence of other medical problems/conditions	4.5	7.8	6.5
Alcohol use/abuse	0.1	0.8	0.5
Drug use/abuse	0.0	0.7	0.4
Smoking	1.6	11.7	7.6
Mentally/physically handicapped	0.3	0.1	0.1
Hyperemesis (nausea/vomitting)	0.1	0.3	0.2
Handicapped child/congenital abnormality	NA	NA	NA
Child or mother w/limited mental capacity or alcohol	NA	NA	NA
Other medical/health risks	0.0	0.8	0.5
Young gravida (<18 years old)	10.9	22.1	17.6
Older gravida (>35 years old)	0.2	2.6	1.6

TABLE 5.2.2 (CONTINUED)

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u> (Continued)			
Older prima gravida (>35 years old)	0.0	1.3	0.8
High gravida (many pregnancies)	1.2	8.6	5.6
High parity (many births)	2.1	3.5	2.9
Other gravida & parity risks	0.2	3.1	1.9
Short inter-conceptual period	3.6	15.8	11.0
Multiple fetus pregnancy	0.0	0.1	0.0
History of negative birth outcomes	4.7	15.2	11.0
Obstetric complication during pregnancy	0.0	0.1	0.1
Caesarian section	0.2	0.0	0.1
Other pregnancy history risks	1.0	3.0	2.2
Prematurity	NA	NA	NA
<u>Dietary/Nutritional</u>	26.9	60.8	47.3
Inadequate nutrient intake	26.9	60.2	46.9
Excessive caloric intake	0.0	0.1	0.0
RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Dietary/Nutritional Risk</u> (Continued)			
Excessive caffeine intake	0.0	2.3	1.4
Food allergies	0.0	0.1	0.1
Food faddism	0.0	0.6	0.4
Inadequate formula consumption	NA	NA	NA
Excessive formula consumption	NA	NA	NA
Other dietary risks	0.0	0.9	0.6
<u>Mother on WIC during pregnancy</u>	NA	NA	NA
<u>Nutritional risk in past but not on WIC</u>	NA	NA	NA
<u>Other family member on WIC</u>	NA	NA	NA
Mother of priority 1 infant	NA	NA	NA
Mother of priority 2 infant	NA	NA	NA
Infant currently breast feeding priority 1 mother	NA	NA	NA
Infant age 0-6 months	NA	NA	NA
<u>Prevent regression</u>	NA	NA	NA

TABLE 5.2.2.2 (CONTINUED)

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
Other	0.1	0.5	0.4
Infant age 0-6 months of young mother (<18)	NA	NA	NA
Other	0.1	0.5	0.4
Total	100.0	201.2	160.5
Categorized**			
Uncategorized**	100.1	269.4	201.7
Percent Reporting	99.9	99.9	99.9

*SINGLE = One risk reported, MULTIPLE = Two or more risks reported, and COMBINED = Any risk reported.

**Totals may not sum to 100.0 percent due to rounding.

Also, uncategorized totals and categorized totals for multiple and combined risks are not equal. See text for explanation.

So, for pregnant women, the main risks reported were inadequate nutrient intake, history or presence of anemia, inadequate or excessive pregnancy weight gain, and young gravida (less than age 18), in order of decreasing frequency.

Breastfeeding Women

The distribution of risk factors for breastfeeding women is different than it was for pregnant women (see Table 5.2.3). First, there was almost an equal percentage reporting an anthropometric, medical/health, or dietary risk (22 - 25 percent) when only one risk factor was reported. In addition, there were a number of mothers who had priority 1 infants (16.0 percent) and were at risk as a result.

In the multiple and combined risk situations, the percentage of those reporting medical/health risks increased dramatically to almost 75 percent for multiple risk reporting and 52 percent for combined risk reporting, primarily because history or presence of anemia was much more prevalent.

While not common, 2.4 percent of all breastfeeding women were assigned the risk factor of preventing regression. Some miscellaneous risks also were reported for breastfeeding women.

Postpartum Women

Among postpartum women, fewer anthropometric risks were reported (18 percent for single risks, 41 percent for multiple risks, and 30 percent for combined risks), though there was slightly more obesity when compared to pregnant and breastfeeding women (see Table 5.2.4). As a category, medical risk once again was the most common and was of the same magnitude for the single and multiple risks situations as for pregnant women. Dietary risk also followed a pattern similar to pregnant women.

Postpartum women showed an interesting single risk reporting pattern. "Mother of a priority 1 infant" was listed as a risk for 3.7 percent, while "mother of a priority 2 infant" was more common for the multiple risk reporting situation (9.4 percent). Prevention of regression also was more common than among breastfeeding women, with approximately 5.5 percent having this risk factor.

In order of decreasing prevalence, the main risk factors for postpartum women were inadequate nutrient intake, history or presence of anemia, obesity, and young gravida (under 18 years of age).

Total Women

Table 5.2.5 presents a summary of combined risk factors at most current certification for women. Overall, medical/health risks were most common, followed by dietary and anthropometric risks in this order. Of the medical/health risks, history or presence of anemia was most common; of the dietary risks, inadequate nutrient intake was most common and served as the most common uncategorized risk factor; and of the anthropometric risks, inadequate or excessive weight gain during pregnancy, and obesity were most common.

Infants

Infants had a different variety of risk factors. Most common among infants was "mother on WIC during pregnancy" (see Table 5.2.6). This was

TABLE 5.2.3

DISTRIBUTION OF CURRENT NUTRITIONAL RISKS (PERCENT): BREASTFEEDING WOMEN

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*	RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Anthropometric</u>	22.5	48.6	36.7	<u>Medical/Health Risks</u>	25.0	74.8	52.1
Obesity	9.8	27.8	19.6	History or presence of anemia	8.0	30.7	20.3
High pre-pregnancy weight for height	2.2	1.9	2.1	Presence of other medical problems/conditions	0.5	8.2	4.7
High weight for height	7.6	25.9	17.5	Alcohol use/abuse	0.0	0.1	0.1
Weight gain during pregnancy inadequate or excessive	2.8	16.9	10.5	Drug use/abuse	0.0	0.0	0.0
Inadequate pregnancy weight gain	1.7	10.5	6.5	Smoking	5.7	6.8	6.3
Excessive pregnancy weight gain	1.1	6.4	4.0	Mentally/physically handicapped	0.0	0.0	0.0
Low pre-pregnancy weight for height	0.5	0.1	0.3	Hyperemesis (nausea/vomitting)	NA	NA	NA
Low height for age	NA	NA	NA	Handicapped child/congenital abnormality	NA	NA	NA
Low weight for age	NA	NA	NA	Child or mother w/limited mental capacity or alcohol	NA	NA	NA
Low birth weight	NA	NA	NA	Other medical/health risks	0.0	2.8	1.5
High weight for age	NA	NA	NA	Young gravida (<18 years old)	4.0	5.6	4.8
Low weight for height	4.0	4.4	4.2	Older gravida (>35 years old)	0.3	1.4	0.9
Other Anthropometric Risks	5.4	2.5	3.8				

TABLE 5.2.3 (CONTINUED)

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u> (Continued)			
Older prima gravida (>35 years old)	0.0	3.2	1.7
High gravida (many pregnancies)	0.7	11.3	6.5
High parity (many births)	0.5	3.5	2.1
Other gravida & parity risks	0.0	0.0	0.0
Short inter-conceptual period	2.0	15.7	9.4
Multiple fetus pregnancy	0.0	1.0	0.5
History of negative birth outcomes	0.4	8.4	4.7
Obstetric complication during pregnancy	0.6	0.4	0.5
Caesarian section	2.3	1.7	2.0
Other pregnancy history risks	0.0	1.6	0.9
Prematurity	NA	NA	NA
<u>Dietary/Nutritional</u>	24.7	50.2	38.6
Inadequate nutrient intake	24.6	50.2	38.5
Excessive caloric intake	0.0	0.0	0.0
<u>RISK FACTOR</u>	<u>SINGLE*</u>	<u>MULTIPLE*</u>	<u>COMBINED*</u>
<u>Dietary/Nutritional Risk</u> (Continued)			
Excessive caffeine intake	0.0	0.1	0.1
Food allergies	0.0	0.7	0.4
Food faddism	0.0	0.0	0.0
Inadequate formula consumption	NA	NA	NA
Excessive formula consumption	NA	NA	NA
Other dietary risks	0.1	0.4	0.3
<u>Mother on WIC during pregnancy</u>	NA	NA	NA
<u>Nutritional risk in past but not on WIC</u>	NA	NA	NA
<u>Other family member on WIC</u>	17.8	25.8	22.2
Mother of priority 1 infant	16.0	20.4	18.4
Mother of priority 2 infant	1.9	5.4	3.8
Infant currently breast feeding priority 1 mother	NA	NA	NA
Infant age 0-6 months	NA	NA	NA
<u>Prevent regression</u>	3.5	1.4	2.4

TABLE 5.2.3 (CONTINUED)

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
Other	6.4	11.4	9.1
Infant of young mother (<18)	NA	NA	NA
Other	6.3	11.4	9.1
-----	-----	-----	-----
Total	99.9	212.2	161.1
Categorized**			
Uncategorized**	99.9	244.1	188.8
Percent Reporting	99.9	99.9	99.9

*SINGLE = One risk reported, MULTIPLE = Two or more risks reported, and COMBINED = Any risk reported.

**Totals may not sum to 100.0 percent due to rounding.

Also, uncategorized totals and categorized totals for multiple and combined risks are not equal. See text for explanation.

TABLE 5.2.4

DISTRIBUTION OF CURRENT NUTRITIONAL RISKS (PERCENT): POSTPARTUM WOMEN

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Anthropometric</u>	18.4	41.3	29.8
Obesity	11.9	29.2	20.6
High weight for height	11.9	29.2	20.6
High pre-pregnancy weight for height	0.1	1.6	0.9
Weight gain during pregnancy inadequate or excessive	3.3	12.1	7.7
Inadequate pregnancy weight gain	0.1	7.8	3.9
Excessive pregnancy weight gain	3.2	4.3	3.8
Low pre-pregnancy weight for height	NA	NA	NA
Low height for age	NA	NA	NA
Low weight for age	NA	NA	NA
Low birth weight	NA	NA	NA
Height weight for age	NA	NA	NA
Low weight for height	3.1	1.9	2.5
Other Anthropometric Risks	0.0	3.3	1.6

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u>	43.5	75.0	59.3
History or presence of anemia	13.3	33.2	23.3
Presence of other medical problems/conditions	0.9	5.7	3.3
Alcohol use/abuse	0.0	0.2	0.1
Drug use/abuse	0.1	0.6	0.4
Smoking	0.3	2.1	1.2
Mentally/physically handicapped	0.0	0.0	0.0
Hyperemesis (nausea/vomitting)	NA	NA	NA
Handicapped child/congenital abnormality	NA	NA	NA
Child or mother w/limited mental capacity or alcohol	NA	NA	NA
Other medical/health risks	0.1	0.4	0.3
Young gravida (<18 years old)	14.8	17.0	15.9
Older gravida (>35 years old)	0.5	1.3	0.9

TABLE 5.2.4 (CONTINUED)

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u> <u>Continued</u>			
Older prima gravida (>35 years old)	0.2	0.1	0.2
High gravida (many pregnancies)	1.2	4.2	2.7
High parity (many births)	0.2	1.0	0.6
Other gravida & parity risks	0.4	2.5	1.5
Short inter-conceptual period	3.7	12.2	8.0
Multiple fetus pregnancy	0.2	0.0	0.1
History of negative birth outcomes	3.6	13.2	8.4
Obstetric complication during pregnancy	1.0	0.8	0.9
Caesarian section	1.9	8.4	5.1
Other pregnancy history risks	1.0	0.8	0.9
Prematurity	NA	NA	NA
<u>Dietary/Nutritional</u>	28.6	69.2	49.0
Inadequate nutrient intake	28.3	69.0	48.7
Excessive caloric intake	0.0	0.0	0.0
RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Dietary/Nutritional Risk</u> <u>(Continued)</u>			
Excessive caffeine intake	0.0	2.0	1.0
Food allergies	0.0	0.1	0.1
Food faddism	0.0	0.2	0.1
Inadequate formula consumption	NA	NA	NA
Excessive formula consumption	NA	NA	NA
Other dietary risks	0.3	0.1	0.2
<u>Mother on WIC during pregnancy</u>	NA	NA	NA
<u>Nutritional risk in past but not on WIC</u>	NA	NA	NA
<u>Other family member on WIC</u>	3.7	9.5	6.6
Mother of priority 1 infant	3.7	0.2	1.9
Mother of priority 2 infant	0.0	9.4	4.7
Infant currently breast feeding priority 1 mother	NA	NA	NA
Infant age 0-6 months	NA	NA	NA
<u>Prevent regression</u>	5.8	5.3	5.5
	5.8	5.3	5.5

TABLE 5.2.4 (CONTINUED)

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
Other	0.1	5.9	0.5
Infant of young mother (<18)	NA	NA	NA
Other	0.1	0.9	0.5

Total	100.1	206.2	150.7
Categorized**			
Uncategorized**	100.0	239.0	169.8
Percent Reporting	99.8	99.8	99.8

*SINGLE = One risk reported, MULTIPLE = Two or more risks reported, and COMBINED = Any risk reported.

**Totals may not sum to 100.0 percent due to rounding.

Also, uncategorized totals and categorized totals for multiple and combined risks are not equal. See text for explanation.

TABLE 5.2.5

DISTRIBUTION OF CURRENT NUTRITIONAL RISKS (PERCENT): TOTAL WOMEN

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Anthropometric</u>	23.5	52.6	39.8
Obesity	8.9	23.6	17.1
High pre-pregnancy weight for height	4.1§	11.1	8.3
High weight for height	5.2§	13.6	9.6
Weight gain during pregnancy inadequate or excessive	9.6	25.4	18.8
Inadequate pregnancy weight gain	4.5	14.6	10.2
Excessive pregnancy weight gain	5.1	10.9	8.6
Low pre-pregnancy weight for height	1.8	4.4	3.3
Low height for age	NA	NA	NA
Low weight for age	NA	NA	NA
Low birth weight	NA	NA	NA
Height weight for age	NA	NA	NA
Low weight for height	1.7	1.7	1.7
Other Anthropometric Risks	1.2	4.2	2.9

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u>	42.0	77.5	61.9
History or presence of anemia	13.7	34.8	25.6
Presence of other medical problems/conditions	2.8	7.2	5.2
Alcohol use/abuse	0.1	0.6	0.3
Drug use/abuse	0.0	0.6	0.3
Smoking	1.9	8.0	5.5
Mentally/physically handicapped	0.2	0.1	0.1
Hyperemesis (nausea/vomitting)	0.1	0.2	0.1
Handicapped child/congenital abnormality	NA	NA	NA
Child or mother w/limited mental capacity or alcohol	NA	NA	NA
Other medical/health risks	NA	1.0	0.6
Young gravida (<18 years old)	10.9	17.9	15.0
Older gravida (>35 years old)	0.3	2.0	1.3

TABLE 5.2.5 (CONTINUED)

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u> (Continued)			
Older prima gravida (>35 years old)	0.1	1.2	0.8
High gravida (many pregnancies)	1.1	7.7	4.9
High parity (many births)	1.3	2.8	2.1
Other gravida & parity risks	0.2	2.4	1.5
Short inter-conceptual period	3.4	14.7	9.8
Multiple fetus pregnancy	0.1	0.2	0.1
History of negative birth outcomes	3.7	13.5	9.2
Obstetric complication during pregnancy	0.4	0.4	0.4
Caesarian section	1.1	2.8	1.9
Other pregnancy history risks	0.8	2.1	1.6
Prematurity	NA	NA	NA
<u>Dietary/Nutritional</u>	27.1	61.6	46.4
Inadequate nutrient intake	26.9	61.2	46.1
Excessive caloric intake	0.0	0.1	0.0
<u>RISK FACTOR</u>	<u>SINGLE*</u>	<u>MULTIPLE*</u>	<u>COMBINED*</u>
<u>Dietary/Nutritional Risk</u> (Continued)			
Excessive caffeine intake	0.0	1.9	1.1
Food allergies	0.0	0.2	0.1
Food faddism	0.0	0.4	0.2
Inadequate formula consumption	NA	NA	NA
Excessive formula consumption	NA	NA	NA
Other dietary risks	0.1	0.6	0.4
<u>Mother on WIC during pregnancy</u>	0.0	0.0	0.0
<u>Nutritional risk in past but not on WIC</u>	0.0	0.0	0.0
<u>Other family member on WIC</u>	4.0	7.1	5.6
Mother of priority 1 infant	3.7	3.4	3.6
Mother of priority 2 infant	0.3	3.7	2.0
Infant currently breastfeeding priority 1 mother	NA	NA	NA
Infant age 0-6 months	NA	NA	NA
<u>Prevent regression</u>	2.3	1.8	2.0

TABLE 5.2.5 (CONTINUED)

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
Other	1.1	2.4	1.8
Infant of young mother (<18)	0.0	0.0	0.0
Other	1.1	2.4	1.8
<hr/>			
Total Categorized**	100.0	203.0	157.5
Uncategorized**	99.1	253.6	186.3
Percent Reporting	99.9	99.9	99.9

*SINGLE = One risk reported, MULTIPLE = Two or more risks reported, and COMBINED = Any risk reported.

**Totals may not sum to 100.0 percent due to rounding.

Also, uncategorized totals and categorized totals for multiple and combined risks are not equal. See text for explanation.

§Do not sum to obesity total because of different obesity definitions for pregnant and postpartum women.

TABLE 5.2.6

DISTRIBUTION OF CURRENT NUTRITIONAL RISKS (PERCENT): INFANTS

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Anthropometric</u>	13.1	51.3	26.0
Obesity	5.2	11.9	7.4
High weight for height	5.1	11.9	7.4
High pre-pregnancy weight for height	NA	NA	NA
Weight gain during pregnancy inadequate or excessive	NA	NA	NA
Inadequate pregnancy weight gain	NA	NA	NA
Excessive pregnancy weight gain	NA	NA	NA
Low pre-pregnancy weight for height	NA	NA	NA
Low height for age	3.0	13.9	6.7
Low weight for age	0.0	3.4	1.2
Low birth weight	1.3	13.5	5.4
High weight for age	0.2	0.1	0.2
Low weight for height	2.1	10.9	5.1
Other Anthropometric Risks	1.4	6.3	3.1

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u>	20.9	37.3	26.5
History or presence of anemia	16.2	27.2	19.9
Presence of other medical problems/conditions	3.3	5.2	4.0
Alcohol use/abuse	NA	NA	NA
Drug use/abuse	NA	NA	NA
Smoking	NA	NA	NA
Mentally/physically handicapped	NA	NA	NA
Hyperemesis (nausea/vomitting)	0.0	0.3	0.1
Handicapped child/congenital abnormality	0.0	0.6	0.2
Child or mother w/limited mental capacity or alcohol	0.0	0.2	0.1
Other medical/health risk	1.2	2.0	1.5
Young gravida (<18 years old)	NA	NA	NA
Older gravida (>35 years old)	NA	NA	NA

TABLE 5.2.6 (CONTINUED)

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u> (Continued)			
Older prima gravida (>35 years old)	NA	NA	NA
High gravida (many pregnancies)	NA	NA	NA
High parity (many births)	NA	NA	NA
Other gravida & parity risks	NA	NA	NA
Short inter-conceptual period	NA	NA	NA
Multiple fetus pregnancy	NA	NA	NA
History of negative birth outcomes	NA	NA	NA
Obstetric complication during pregnancy	NA	NA	NA
Caesarian section	NA	NA	NA
Other pregnancy history risks	NA	NA	NA
Prematurity	0.2	5.7	2.0
<u>Dietary/Nutritional</u>	13.7	49.4	25.7
Inadequate nutrient intake	10.5	44.8	22.1
Excessive caloric intake	NA	NA	NA

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
<u>Dietary/Nutritional Risk</u> (Continued)			
Excessive caffeine intake	NA	NA	NA
Food allergies	1.4	3.0	2.0
Food faddism	0.0	0.0	0.0
Inadequate formula consumption	0.1	0.1	0.1
Excessive formula consumption	0.4	2.8	1.2
Other dietary risks	1.2	3.4	1.9
<u>Mother on WIC during pregnancy</u>	35.7	34.8	35.4
<u>Nutritional risk in past but not on WIC</u>	7.2	4.5	6.3
<u>Other family member on WIC</u>	2.3	8.6	4.5
Mother of priority 1 infant	NA	NA	NA
Mother of priority 2 infant	NA	NA	NA
Infant currently breast feeding priority 1 mother	1.0	7.7	3.3
Infant age 0-6 months	1.3	7.2	3.3
<u>Prevent regression</u>	4.8	19.4	9.7

TABLE 5.2.6 (CONTINUED)

RISK FACTOR	SINGLE*	MULTIPLE*	COMBINED*
Other Risk	2.3	5.6	3.4
Infant of young mother (<18)	0.3	2.1	0.9
Age 0-6 months			
Other	2.0	3.5	2.5
Total			
Categorized**	100.0	210.9	137.5
Uncategorized**	99.9	234.5	145.6
Percent Reporting	100.0	100.0	100.0

*SINGLE = One risk reported, MULTIPLE = Two or more risks reported, and COMBINED = Any risk reported.

**Totals may not sum to 100.0 percent due to rounding.

Also, uncategorized totals and categorized totals for multiple and combined risks are not equal. See text for explanation.

reported as a risk by 35 - 36 percent of the infants, regardless of whether single or multiple risks were recorded. Medical/health risk appeared as the next most frequent categorized single risk, yet it lagged behind anthropometric and dietary risk when multiple risks were reported. If it is assumed that the sample of infants is approximately the same in the single risk versus multiple risk reporting sites, then it may be that medical/health risks are given priority when they are present and are always reported.

Prevention of regression was even more common among infants than among any of the women groups. Approximately 5 percent of the single risks and 19 percent of the multiple risks were prevention of regression.

Children

The distribution of risks for children was analyzed for each age group separately as well as for all children combined. The results appear in Tables 5.2.7 and 5.2.8. There was not much difference between the percent of anthropometric, medical/health, and dietary risks reported. Medical/health risk was most common, especially for the history or presence of anemia. Medical risk was slightly less common among four-year olds than among the other children when it was a single risk factor; however, it was more common among four-year-olds than among two- or three-year-olds when reported as a multiple risk factor.

Once again, inadequate nutrient intake comprised the major dietary risk condition and was most common among four-year-olds as a single reported risk. In opposition to the pattern of medical risk, the percent reporting this risk factor in the multiple risk situation became greater for two- and three-year-olds.

Anthropometric risk was much less common among four-year-olds, regardless of whether single or multiple risks were reported.

Prevention of regression was more common among children than any other participant group. Overall, 10 - 12 percent of the children reported this as a risk factor, with 12 percent reporting it as their only qualifying risk factor. It was most common as the only risk among the older children, but it was more common as a multiple risk among younger children. The reason for a reduction in the reporting of prevention of regression as a multiple risk probably is that other risks give higher priority assignments, and with the addition of agency pressure to reduce the number of participants certified for this risk, prevention of regression may be reported only if no other risk factor would qualify a child for WIC. Thus, it would be expected more frequently as a single risk factor and less frequently as a multiple risk factor.

Total Participants

Tables 5.2.9 and 5.2.10 present summaries of the risk factor distributions. Table 5.2.9 describes the overall distributions of risks for single, multiple, and combined risks, while table 5.2.10 compares the distribution of combined risks across participant categories.

First, as was shown from the individual participant category distributions, multiple risk reporting generally produced higher proportions

TABLE 5.2.7

DISTRIBUTION OF CURRENT NUTRITIONAL RISKS (PERCENT): CHILDREN

RISK CATEGORY	SINGLE*				MULTIPLE*				COMBINED*			
	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4
<u>Anthropometric</u>	25.3	27.0	23.6	16.8	59.5	61.4	63.4	52.5	40.0	40.1	39.0	27.9
Obesity	8.4	9.9	5.8	5.7	13.3	17.4	14.0	15.5	10.5	12.8	9.0	8.8
High pre-pregnancy weight for height	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
High weight for height	8.4	9.9	5.8	5.7	13.3	17.4	14.0	15.3	10.5	12.8	9.0	8.8
Weight gain during pregnancy inadequate or excessive	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inadequate pregnancy weight gain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Excessive pregnancy weight gain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Low pre-pregnancy weight for height	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Low height for age	6.3	8.5	9.0	4.3	21.7	17.2	28.7	18.1	12.9	11.8	16.6	8.6
Low weight for age	0.4	0.1	0.3	0.3	6.7	10.0	17.6	9.4	3.1	3.9	7.0	3.2
Low birth weight	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.1	0.1	0.0
High weight for age	0.4	0.5	0.2	0.2	1.5	1.5	4.8	1.2	0.9	0.9	2.0	0.5
Low weight for height	7.3	6.2	4.9	3.3	20.5	17.7	19.6	9.4	13.0	10.6	10.6	5.2
Other Anthropometric Risks	2.5	1.7	3.5	3.0	13.1	13.5	9.4	15.7	7.0	6.2	5.8	6.9

TABLE 5.2.7 (CONTINUED)

RISK CATEGORY	SINGLE*				MULTIPLE*				COMBINED*			
	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4
Medical/Health Risks	35.0	'32.9	'35.4	'27.8	67.4	'52.5	'51.2	'55.7	48.9	'40.4	'41.5	'36.5
History or presence of anemia	24.6	25.9	30.1	21.5	56.7	40.5	39.4	42.3	38.4	31.4	33.7	28.0
Presence of other medical problems/conditions	9.5	4.6	3.7	4.8	15.6	17.7	13.8	16.0	12.1	9.6	7.6	8.3
Alcohol use/abuse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drug use/abuse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smoking	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mentally/physically handicapped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hyperemesis (nausea/vomitting)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Handicapped child/congenital abnormality	0.3	1.2	0.2	0.1	1.0	0.1	1.1	0.2	0.6	0.8	0.6	0.1
Child or mother w/limited mental capacity or alcohol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.6	1.2	1.3	1.3	2.0	4.9	4.6	5.9	1.2	2.6	2.6	2.8
Young gravida (<18 years old)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Older gravida (>35 years old)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Older prima gravida (>35 years old)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 5.2.7 (CONTINUED)

RISK CATEGORY	SINGLE*				MULTIPLE*				COMBINED*			
	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4
High gravida (many pregnancies)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
High parity (many births)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other gravida & parity risks	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Short inter-conceptual period	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Multiple fetus pregnancy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
History or negative birth outcomes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Obstetric complications during pregnancy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caesarian section	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other pregnancy history risks	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Prematurity	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dietary/Nutritional Risks	26.8	27.4	28.9	38.8	53.4	65.0	62.4	62.5	38.2	41.8	41.9	46.2
Indadequate nutrient intake	25.8	26.2	27.9	38.6	50.0	60.1	60.8	57.1	36.2	39.1	40.6	44.4
Excessive caloric intake	0.0	0.0	0.2	0.0	0.1	0.0	1.0	0.5	0.1	0.0	0.6	0.2
Excessive caffeine intake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 5.2.7 (CONTINUED)

RISK CATEGORY	SINGLE*				MULTIPLE*				COMBINED*			
	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4
Food allergies	0.2'	0.9'	0.1'	0.0	2.9'	3.9'	0.1'	5.4	1.4'	2.0'	0.1'	1.7
Food faddism	0.0'	0.1'	0.1'	0.0	0.0'	0.6'	0.9'	0.2	0.0'	0.3'	0.4'	0.1
Inadequate formula consumption	0.0'	0.0'	0.0'	0.0	0.0'	0.0'	0.0'	0.0	0.0'	0.0'	0.0'	0.0
Excessive formula consumption	0.0'	0.0'	0.0'	0.0	0.0'	0.0'	0.0'	0.0	0.0'	0.0'	0.0'	0.0
Other dietary risks	0.8'	0.3'	0.5'	0.2	3.3'	5.0'	4.9'	0.1	1.9'	2.1'	2.2'	0.2
<u>Mother on WIC during pregnancy</u>	0.8	'0.0	'0.0	'0.0	0.9	'0.0	'0.0	'0.0	0.9	'0.0	'0.0	'0.0
	0.8'	0.0'	0.0'	0.0	0.9'	0.0'	0.0'	0.0	0.9'	0.0'	0.0'	0.0
<u>Nutritional risk in past but not on WIC</u>	0.0	'0.0	'0.0	'0.0	0.0	'0.0	'0.0	'0.0	0.0	'0.0	'0.0	'0.0
	0.0'	0.0'	0.0'	0.0	0.0'	0.0'	0.0'	0.0	0.0'	0.0'	0.0'	0.0
<u>Other family member on WIC</u>	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA
Mother of priority 1 infant	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA
Mother of priority 2 infant	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA
Infant currently breast feeding priority 1 mother	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA
Infant age 0-6 months	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA	NA	'NA	'NA	'NA
<u>Prevent regression</u>	9.7	'12.5	'12.0	'16.4	10.9	'10.7	'9.8	'8.7	10.2	'11.8	'11.1	'14.0
	9.7'	12.5'	12.0'	16.4'	10.9'	10.7'	9.8'	8.7'	10.2'	11.8'	11.1'	14.0'

TABLE 5.2.7 (CONTINUED)

RISK CATEGORY	SINGLE*				MULTIPLE*				COMBINED*			
	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4	AGE 1	AGE 2	AGE 3	AGE 4
Other	2.4	0.2	0.1	0.2	0.1	1.2	1.4	1.7	2.0	0.6	0.6	0.7
Infant of young mother (<18)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other	2.4	0.2	0.1	0.2	0.1	1.2	1.4	1.7	2.0	0.6	0.6	0.7
Total												
Categorized**	100.0	100.0	100.0	100.0	192.2	190.8	188.2	181.1	140.2	134.7	134.1	125.3
Uncategorized**	100.0	100.0	99.9	99.9	220.3	222.3	232.2	207.2	152.4	146.6	151.2	133.7

*SINGLE = One risk reported, MULTIPLE = Two or more risks reported, and COMBINED = Any risk reported.

**Totals may not sum to 100.0 percent due to rounding. Also, uncategorized totals and categorized totals for multiple and combined risks are not equal. See text for explanation.

TABLE 5.2.8

DISTRIBUTION OF CURRENT NUTRITIONAL RISKS (PERCENT): TOTAL CHILDREN

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Anthropometric</u>	23.9	59.9	37.9
Obesity	7.8	14.8	10.5
High pre-pregnancy weight for height	NA	NA	NA
High weight for height	7.8	14.8	10.5
Weight gain during pregnancy inadequate or excessive	NA	NA	NA
Inadequate pregnancy weight gain	NA	NA	NA
Excessive pregnancy weight gain	NA	NA	NA
Low pre-pregnancy weight for height	NA	NA	NA
Low height for age	7.1	21.4	12.7
Low weight for age	0.3	10.2	4.1
Low birth weight	0.0	0.1	0.0
High weight for age	0.3	2.1	1.0
Low weight for height	5.8	18.1	10.6
Other Anthropometric Risks	2.6	12.8	6.5

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u>	33.2	58.5	43.0
History or presence of anemia	25.5	46.9	33.8
Presence of other medical problems/conditions	6.1	15.8	9.9
Alcohol use/abuse	NA	NA	NA
Drug use/abuse	NA	NA	NA
Smoking	NA	NA	NA
Mentally/physically handicapped	NA	NA	NA
Hyperemesis (nausea/vomitting)	NA	NA	NA
Handicapped child/congenital abnormality	0.5	0.7	0.6
Child or mother w/limited mental capacity or alcohol	0.0	0.0	0.0
Other medical/health risk	1.0	3.8	2.1
Young gravida (<18 years old)	NA	NA	NA
Older gravida (>35 years old)	NA	NA	NA

TABLE 5.2.8 (CONTINUED)

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u> (Continued)			
Older prima gravida (>35 years old)	NA	NA	NA
High gravida (many pregnancies)	NA	NA	NA
High parity (many births)	NA	NA	NA
Other gravida & parity risks	NA	NA	NA
Short inter-conceptual period	NA	NA	NA
Multiple fetus pregnancy	NA	NA	NA
History of negative birth outcomes	NA	NA	NA
Obstetric complication during pregnancy	NA	NA	NA
Caesarian section	NA	NA	NA
Other pregnancy history risks	NA	NA	NA
prematurity	NA	NA	NA
<u>Dietary/Nutritional</u>	29.6	59.6	41.2
Inadequate nutrient intake	28.6	55.9	39.2
Excessive caloric intake	0.0	0.3	0.2

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Dietary/Nutritional Risk</u> (Continued)			
Excessive caffeine intake	NA	NA	NA
Food allergies	0.3	3.0	1.4
Food faddism	0.0	0.4	0.2
Inadequate formula consumption	NA	NA	NA
Excessive formula consumption	NA	NA	NA
Other dietary risks	0.5	3.7	1.7
<u>Mother on WIC during</u> <u>pregnancy</u>	0.3	0.4	0.3
<u>Nutritional risk in</u> <u>past but not on WIC</u>	NA	NA	NA
<u>Other family member on</u> <u>WIC</u>	NA	NA	NA
Mother of priority 1 infant	NA	NA	NA
Mother of priority 2 infant	NA	NA	NA
Infant currently breast feeding priority 1 mother	NA	NA	NA
Infant age 0-6 months	NA	NA	NA
<u>Prevent regression</u>	12.2	10.3	11.5
	12.2	10.3	11.5

TABLE 5.2.8 (CONTINUED)

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Other Risk</u>	1.0	0.9	1.1
Infant of young mother (<18)	NA	NA	NA
Other	1.0	0.9	1.1
Total			
Categorized**	100.2	189.2	135.0
Uncategorized**	99.9	221.6	147.4
% Reporting	99.7	99.7	99.7

*SINGLE = One risk reported, MULTIPLE = Two or more risks reported, and COMBINED = Any risk reported.

**Totals may not sum to 100.0 percent due to rounding.

Also, uncategorized totals and categorized totals for multiple and combined risks are not equal. See text for explanation.

TABLE 5.2.9

DISTRIBUTION OF CURRENT NUTRITIONAL RISKS (PERCENT): TOTAL WIC PARTICIPANTS*

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*	RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Anthropometric</u>	23.0	52.5	35.3	<u>Medical/Health Risks</u>	32.1	57.5	43.2
Obesity	7.1	15.1	10.6	History or presence of anemia	20.4	39.1	28.3
High pre-pregnancy weight for height	1.0	2.6	1.9	Presence of other medical problems/conditions	4.6	11.1	7.3
High weight for height	6.5	13.8	9.5	Alcohol use/abuse	0.0	0.1	0.1
Weight gain during pregnancy inadequate or excessive	2.2	5.9	4.4	Drug use/abuse	0.0	0.1	0.1
Inadequate pregnancy weight gain	1.0	3.4	2.4	Smoking	0.4	1.9	1.3
Excessive pregnancy weight gain	1.2	2.5	2.0	Mentally/physically handicapped	0.0	0.0	0.0
Low pre-pregnancy weight for height	0.4	1.0	0.8	Hyperemesis (nausea/vomitting)	0.0	0.1	0.0
Low height for age	4.4	14.5	8.2	Handicapped child/congenital abnormality	0.3	0.5	0.4
Low weight for age	0.2	6.1	2.4	Child or mother w/limited mental capacity or alcohol	0.0	0.1	0.0
Low birth weight	0.3	3.5	1.4	Other medical/health risk	0.8	2.7	1.6
High weight for age	0.2	1.1	0.6	Young gravida (<18 years old)	2.5	4.2	3.5
Low weight for height	3.9	12.5	7.1	Older gravida (>35 years old)	0.1	0.5	0.3
Other Anthropometric Risks	2.0	9.1	5.0				

TABLE 5.2.9 (CONTINUED)

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Medical/Health Risks</u> (Continued)			
Older prima gravida (>35 years old)	0.0	0.3	0.2
High gravida (many pregnancies)	0.3	1.8	1.1
High parity (many births)	0.3	0.7	0.5
Other gravida & parity risks	0.0	0.6	0.3
Short inter-conceptual period	0.8	3.4	2.3
Multiple fetus pregnancy	0.0	0.0	0.0
History of negative birth outcomes	0.9	3.1	2.1
Obstetric complication during pregnancy	0.1	0.1	0.1
Caesarian section	0.3	0.7	0.4
Other pregnancy history risks	0.2	0.5	0.4
Prematurity	0.0	1.4	0.5
<u>Dietary/Nutritional Risk</u>	25.0	57.5	38.5
Inadequate nutrient intake	23.6	54.3	36.5
Excessive caloric intake	0.0	0.2	0.1

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
<u>Dietary/Nutritional Risk</u> (Continued)			
Excessive caffeine intake	0.0	0.4	0.3
Food allergies	.5	2.3	1.2
Food faddism	0.0	0.0	0.0
Inadequate formula consumption	0.0	0.0	0.0
Excessive formula consumption	0.1	0.7	0.3
Other dietary risks	0.6	2.9	1.4
<u>Mother on WIC during pregnancy</u>	9.2	9.0	9.1
<u>Nutritional risk in past but not on WIC</u>	1.8	1.1	1.6
<u>Other family member on WIC</u>	1.5	3.8	2.4
Mother of priority 1 infant	0.6	0.8	0.7
Mother of priority 2 infant	0.1	0.2	0.1
Infant currently breast feeding priority 1 mother	0.3	2.0	0.9
Infant age 0-6 months	0.3	1.8	0.8
<u>Prevent regression</u>	8.0	10.6	8.8

TABLE 5.2.9 (CONTINUED)

RISK CATEGORY	SINGLE*	MULTIPLE*	COMBINED*
Other Risk	1.4	2.4	1.8
Infant of young mother (<18)§	0.1	0.5	0.2
Other	1.3	1.9	1.6
Total			
Categorized**	102.0	194.4	140.7
Uncategorized**	99.6	231.8	155.7
% Reporting	99.8	99.8	99.8

*SINGLE = One risk reported, MULTIPLE = Two or more risks reported, and COMBINED = Any risk reported.

**Totals may not sum to 100.0 percent due to rounding.

Also, uncategorized totals and categorized totals for multiple and combined risks are not equal. See text for explanation.

§NA's in women and children tables counted as zeros in this computation.

TABLE 5.2.10
DISTRIBUTION OF COMBINED RISK FACTORS BY PARTICIPANT CATEGORY
FOR CURRENT CERTIFICATION (PERCENT)

RISK FACTOR	WOMEN				INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
<u>Anthropometric</u>	46.4	36.7	29.8	39.8	26.0	40.0	40.1	39.0	27.9	37.9	35.3
Obesity*	14.3	19.6	20.6	14.2	7.4	10.5	12.8	9.0	8.8	10.5	10.6
High pre-pregnancy weight for height	14.3	2.1	0.9	8.3	NA	NA	NA	NA	NA	NA	1.9
High weight for height	1.0	17.5	20.6	9.6	7.4	10.5	12.8	9.0	8.8	10.5	9.5
Weight gain during pregnancy inadequate or excessive	27.3	10.5	7.7	18.8	NA	NA	NA	NA	NA	NA	4.4
Inadequate pregnancy weight gain	14.9	6.5	3.9	10.2	NA	NA	NA	NA	NA	NA	2.4
Excessive pregnancy weight gain	12.6	4.0	3.8	8.6	NA	NA	NA	NA	NA	NA	2.0
Low pre-pregnancy weight for height	6.1	0.3	NA	3.3	NA	NA	NA	NA	NA	NA	0.8
Low height for age	NA	NA	NA	NA	6.7	12.9	11.8	16.6	8.6	12.7	8.2
Low weight for age	NA	NA	NA	NA	1.2	3.1	3.9	7.0	3.2	4.1	2.4
Low birth weight	NA	NA	NA	NA	5.4	0.0	0.1	0.1	0.0	0.0	1.4
High weight for age	NA	NA	NA	NA	0.2	0.9	0.9	2.0	0.5	1.0	0.6
Low weight for length	0.5	4.2	2.5	1.7	5.1	13.0	10.6	10.6	5.2	10.6	7.1
Other Anthropometric Risks	3.4	3.8	1.6	2.9	3.1	7.0	6.2	5.8	6.9	6.5	5.0

TABLE 5.2.10 (CONTINUED)

RISK FACTOR	WOMEN				INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
<u>Medical/Health Risks</u>	66.4	52.1	59.3	61.9	26.5	48.9	40.4	41.5	36.5	43.0	43.2
History or presence of anemia	28.5	20.3	3.3	25.6	19.9	38.4	31.4	33.7	28.0	33.8	28.3
Presence of other medical problems/conditions	6.5	4.7	3.3	5.2	4.0	12.1	9.6	7.6	8.3	9.9	7.3
Alcohol use/abuse	0.5	0.3	0.1	0.3	NA	NA	NA	NA	NA	NA	0.1
Drug use/abuse	0.4	0.1	0.4	0.3	NA	NA	NA	NA	NA	NA	0.1
Smoking	7.6	6.3	1.2	5.5	NA	NA	NA	NA	NA	NA	1.3
Mentally/physically handicapped	0.1	0.0	0.0	0.1	NA	NA	NA	NA	NA	NA	0.0
Hyperemesis (nausea/vomiting)	0.2	NA	NA	0.1	0.1	NA	NA	NA	NA	NA	0.0
Handicapped child/congenital abnormality	NA	NA	NA	NA	0.2	0.6	0.8	0.6	0.1	0.6	0.4
Mother with limited mental capacity or alcohol/drug abuser	NA	NA	NA	NA	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other Medical/Health	0.5	1.5	0.3	0.6	1.5	1.2	2.6	2.6	2.8	2.1	1.6
Young gravida (<18 years old)	17.6	4.8	5.9	15.0	NA	NA	NA	NA	NA	NA	3.5
Older gravida (>35 years old)	1.6	0.9	0.9	1.3	NA	NA	NA	NA	NA	NA	0.3
Older prima gravida (>35 years old)	0.8	1.7	0.2	0.7	NA	NA	NA	NA	NA	NA	0.2

TABLE 5.2.10 (CONTINUED)

RISK FACTOR	WOMEN				INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
High gravida (many pregnancies)	5.6	6.5	2.7	4.9	NA	NA	NA	NA	NA	NA	1.1
High parity (many births)	2.9	2.1	0.6	2.1	NA	NA	NA	NA	NA	NA	0.5
Other gravida & parity risks	1.9	0.0	1.5	1.5	NA	NA	NA	NA	NA	NA	0.3
Short inter-conceptual period	11.0	9.4	8.0	9.8	NA	NA	NA	NA	NA	NA	2.3
Multiple fetus pregnancy	0.0	0.5	0.1	0.1	NA	NA	NA	NA	NA	NA	0.0
History of negative birth outcomes	11.0	4.7	8.4	9.2	NA	NA	NA	NA	NA	NA	2.1
Obstetric complication during pregnancy	0.1	0.5	0.9	0.4	NA	NA	NA	NA	NA	NA	0.1
Caesarian section	0.1	2.0	5.1	1.9	NA	NA	NA	NA	NA	NA	0.4
Other pregnancy history risks	2.2	0.9	0.9	1.6	NA	NA	NA	NA	NA	NA	0.4
Prematurity	NA	NA	NA	NA	2.0	NA	NA	NA	NA	NA	0.5
Dietary/Nutritional	47.3	38.6	49.0	46.4	25.7	38.2	41.8	41.9	46.2	41.2	38.5
Inadequate nutrient intake	46.9	38.5	48.7	46.1	22.1	36.2	39.1	40.6	44.4	39.2	36.5
Excessive caloric intake	0.0	0.0	0.1	0.0	NA	0.1	0.0	0.6	0.2	0.2	0.1
Excessive caffeine intake	1.4	0.1	0.1	1.1	NA	NA	NA	NA	NA	NA	0.3

TABLE 5.2.10 (CONTINUED)

RISK FACTOR	WOMEN				INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
Food allergies	0.1	0.4	0.1	0.1	2.0	1.4	2.0	0.1	1.7	1.4	1.2
Food faddism	0.4	0.0	0.1	0.2	0.0	0.0	0.3	0.4	0.1	0.2	0.1
Inadequate formula consumption	NA	NA	NA	NA	0.1	NA	NA	NA	NA	NA	0.0
Excessive formula consumption	NA	NA	NA	NA	1.2	NA	NA	NA	NA	NA	0.3
Other dietary risks	0.6	0.3	0.2	0.4	1.9	1.9	2.1	2.2	0.2	1.7	1.4
<u>Other risk</u>	0.4	9.5	0.5	1.9	3.4	2.0	0.6	0.6	0.7	1.1	1.9
Mother of priority 1 infant	NA	18.4	1.9	3.0	NA	NA	NA	NA	NA	NA	0.7
Mother of priority 2 infant	NA	3.8	4.7	0.6	NA	NA	NA	NA	NA	NA	0.1
Infant currently breastfeeding priority 1 mother	NA	0.4	NA	0.1	3.3	NA	NA	NA	NA	NA	0.9
Infant age 0-6 months	NA	NA	NA	NA	3.3	NA	NA	NA	NA	NA	0.8
Mother on WIC during pregnancy	NA	NA	NA	NA	35.4	0.9	0.0	0.0	0.0	0.0	9.1
Nutritional risk in past but not on WIC	NA	NA	NA	NA	6.3	NA	NA	NA	NA	NA	1.6
Other family member on WIC	NA	22.2	6.6	5.6	4.5	NA	NA	NA	NA	NA	2.4
Prevent regression	NA	2.4	5.5	2.0	9.7	10.2	11.8	11.1	14.0	11.5	8.8
				5.6	4.5	10.2	11.8	11.1	14.0	11.5	8.8

TABLE 5.2.10 (CONTINUED)

RISK FACTOR	WOMEN				INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
Infant of young mother (<18)	NA	NA	NA	NA	0.9	0.1	0.0	0.0	0.0	0.0	0.2
Other	0.4	9.1	0.5	1.8	2.5	0.1	0.0	0.0	0.0	0.0	1.1
Total											
Categorized	160.5	161.5	150.7	157.6	137.5	140.2	134.7	134.1	125.3	133.0	140.8
Uncategorized	201.7	201.2	169.8	191.0	150.1	150.6	146.0	151.2	133.0	146.3	191.8
% Reporting	99.9	99.9	99.8	99.9	100.0	--	--	--	--	99.7	99.8

*For pregnant participants obesity includes only high pre-pregnancy weight for height, for postpartum participants obesity includes only high weight for height.

of participants responding affirmatively to a greater number of individual risks. More medical/health risks were reported as single risks compared to other single risks, but there was almost an equal proportion of participants reporting anthropometric, medical/health, and dietary risks listed as multiple risks. The probable reason is the same one mentioned earlier: medical risk produces higher WIC priority, so it always gets reported, whether a single or multiple risk factor. Whereas for multiple risks, other risks can get reported as well.

The most common individual risks were inadequate nutrient intake, ranging from 23.6 to 54.3 percent as a single or multiple risk, respectively. Following this was history or presence of anemia, reported for 20.4 percent of participants in single risk situations, and 39.1 percent in multiple risk situations. No other risk was reported as the single, primary risk by more than 9 percent of the participants.

Table 5.2.10 shows definite differences between participant categories. Medical/health risk was the most common -- reported by 43.2 percent of WIC participants, primarily women. Infants were much less likely to have medical/health risks than women or children. History or presence of anemia was most frequently reported as a medical/health risk for children, and least frequently reported by infants. The latter finding is not unexpected since blood iron measures are not taken of infants until after six months of age, and earlier data has shown that most infants enter the WIC program prior to six months after birth.

Dietary risk was reported for 38.5 percent of the participants, primarily women and children. Far fewer infants reported dietary risk which was expected since their diet consists primarily of formula. By far the most common dietary risk was inadequate nutrient intake.

Anthropometric risk was much less common among infants and postpartum women than among other categories of participants, and its prevalence decreased somewhat as child age increased. As a category, anthropometric risk was most common among pregnant women. Overall, 35.3 percent of all WIC participants had reported one or more anthropometric risks, primarily obesity; although low height for age was more common than obesity for children, and low weight for height followed close behind.

The largest risk category for infants that involved them almost exclusively was "mother on WIC during pregnancy." This risk was reported for 35.4 percent of the infants.

The totals at the end of Table 5.2.10 exceeded 100 percent because more than one risk could be reported. The uncategorized and categorized risks are unequal because more than one uncategorized risk could be present in a categorized risk.

To assist in visualizing the distribution of risks by participant category, Figures 5.2.1 - 5.2.4 were prepared to show the comparative frequency by participant category with which anthropometric, medical/health, dietary, and regression risks occurred, respectively. Current combined risk data were used in preparing these graphs.

5.3 Initial Nutritional Risk Criteria

The previous section focused on risk factors from the most current certification period. Risk factors may change over the course of WIC

FIGURE 5.2.1
ANTHROPOMETRIC RISK FACTOR
 (AT CURRENT CERTIFICATION BY PARTICIPANT CATEGORY)

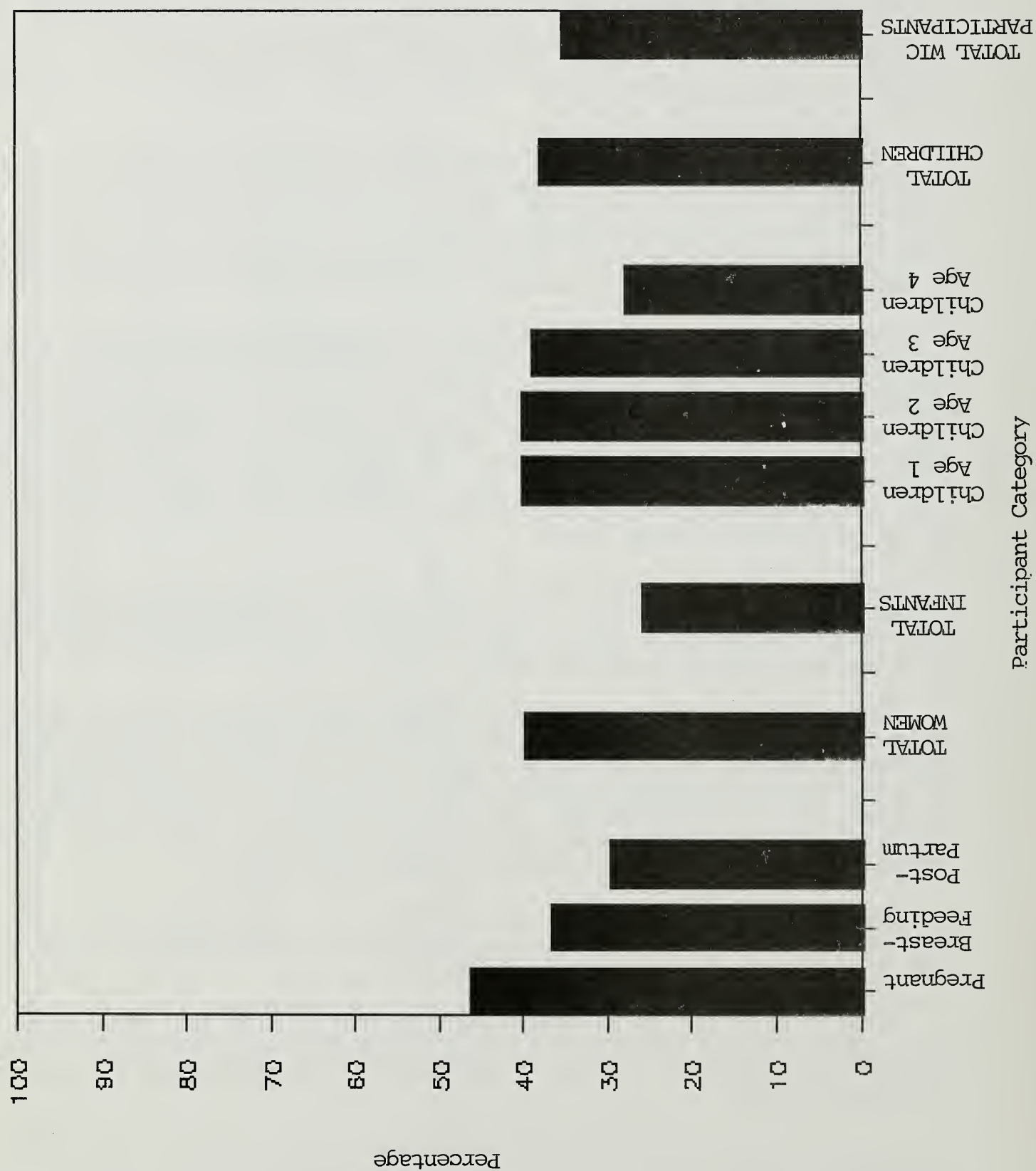


FIGURE 5.2.2.2
MEDICAL/HEALTH RISK FACTOR
 (AT CURRENT CERTIFICATION BY PARTICIPANT CATEGORY)

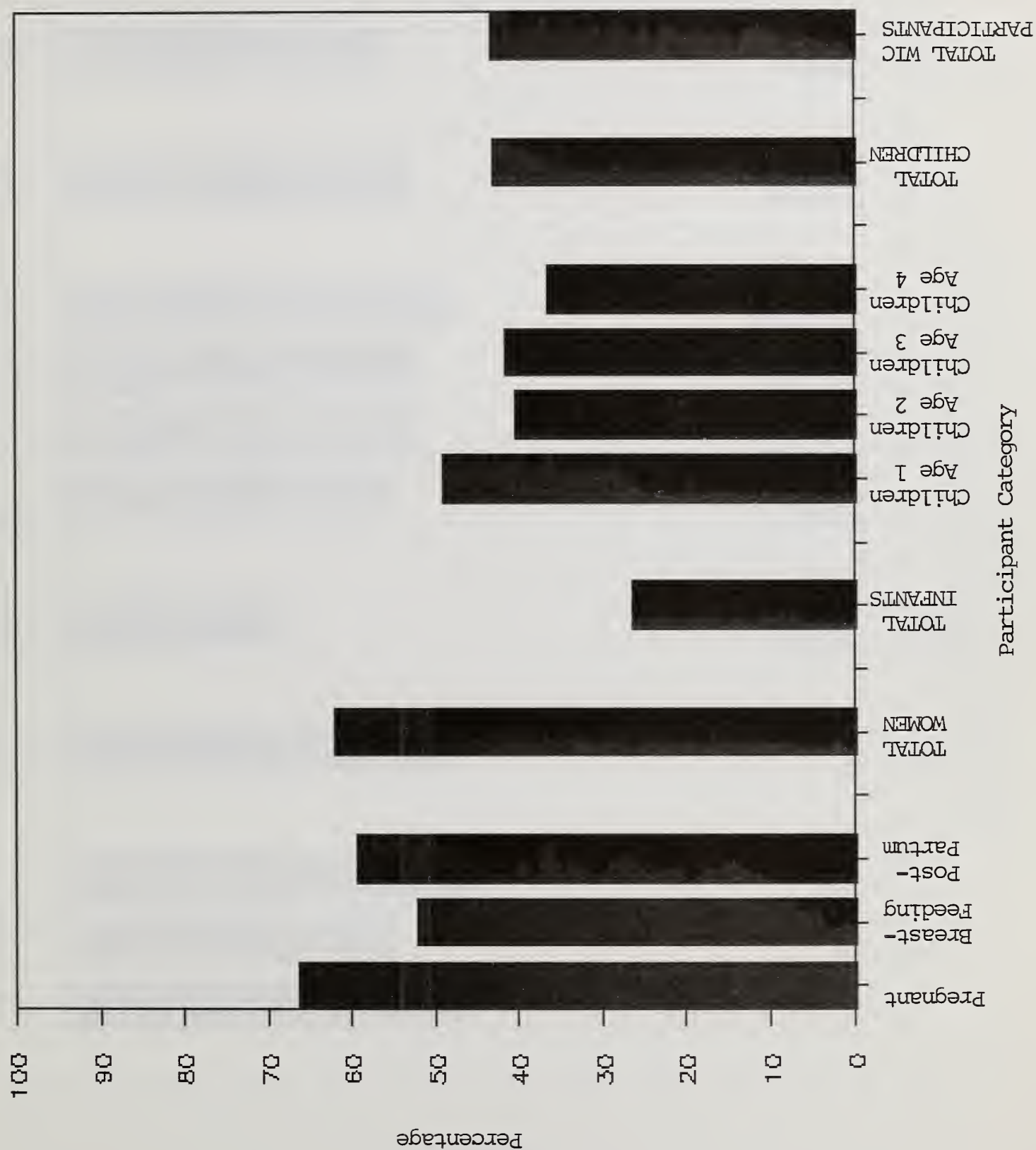


FIGURE 5.2.3
DIETARY/NUTRITION RISK FACTOR
 (AT CURRENT CERTIFICATION BY PARTICIPANT CATEGORY)

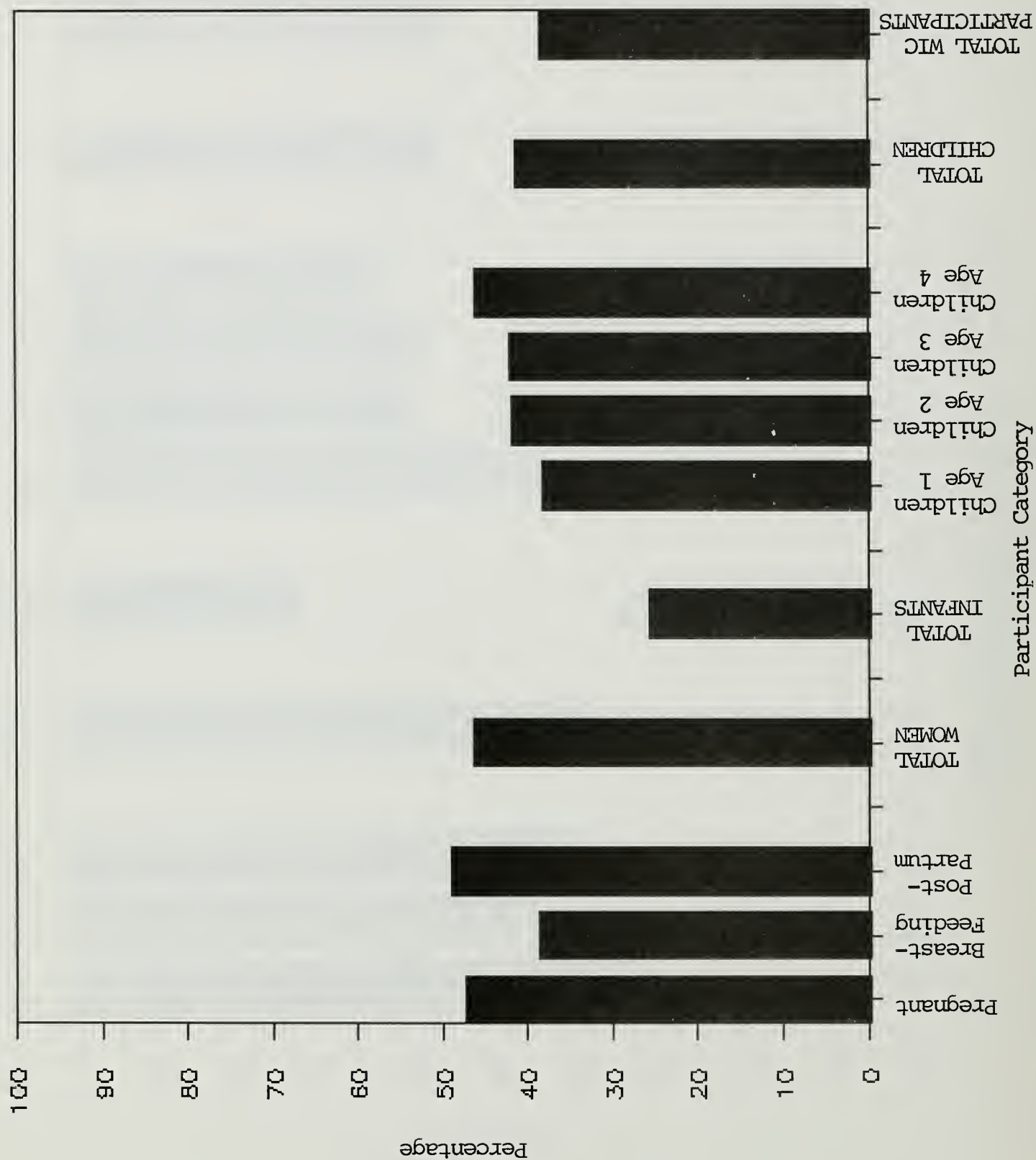
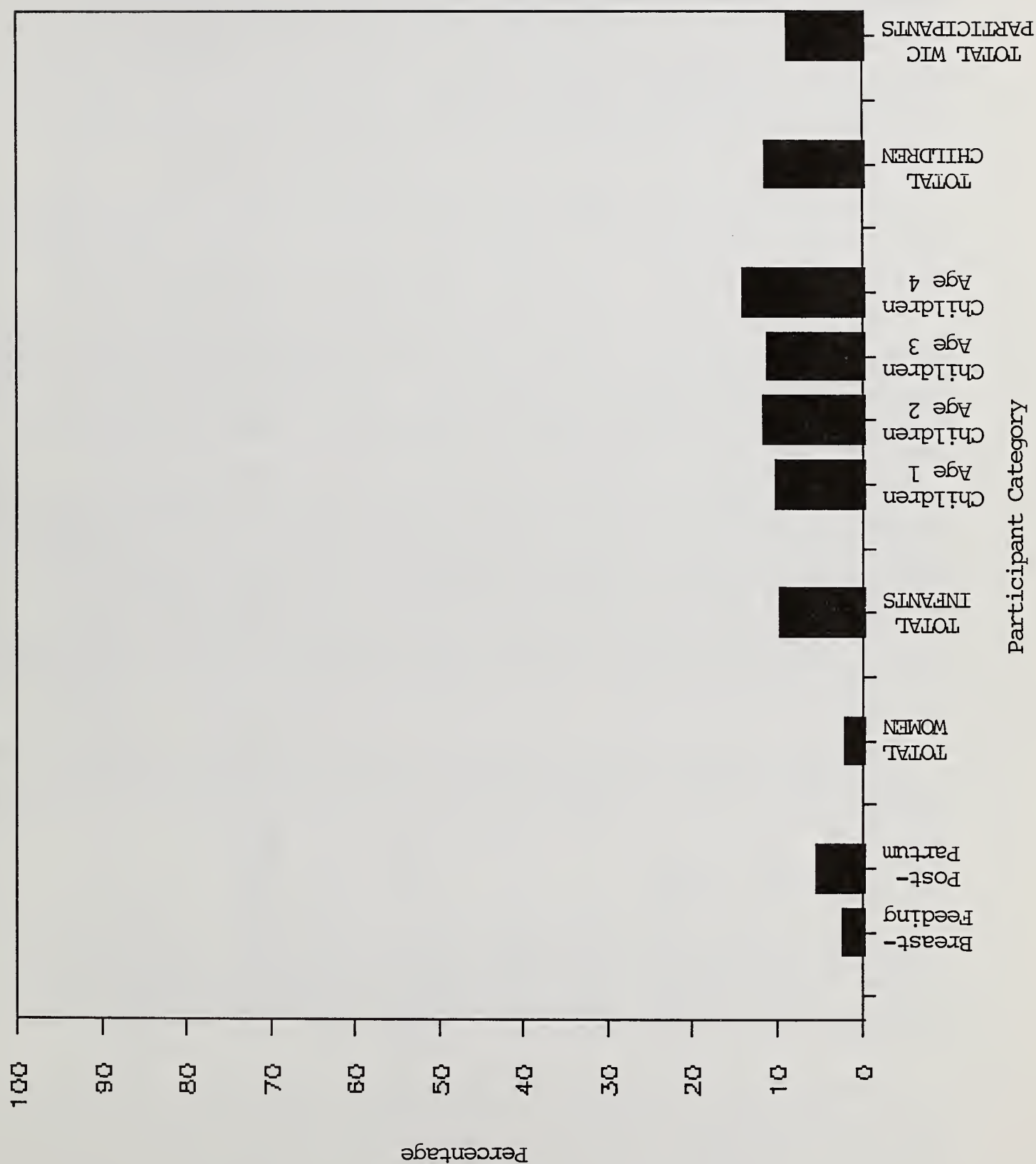


FIGURE 5.2.4
REGRESSION RISK FACTOR
(AT CURRENT CERTIFICATION BY PARTICIPANT CATEGORY)



participation, so the risk factors that existed when participants first became certified also were examined. Pregnant and postpartum women can be certified only once, so initial and current certification data are the same. Data presented in the previous section for these two participant categories will not be presented a second time. For the remaining participant categories -- breastfeeding women, infants, and children -- risk factor data from their initial certification in that category will be presented and compared to risk factor data from their current certification.

The initial risk is based on the same participant category as the current risk. So, for example, the initial risk of a three-year-old child who was first certified as an infant would be the initial risk when the child was a one-year-old -- when he first entered the "child" category.

As with the current risks described earlier, the frequencies of initial risks varied if counted as single, multiple or combined risks. The extent of reporting single versus multiple initial risks was essentially the same as for current risks shown in Table 5.2.1. For the sake of brevity, one composite table for initial risks is presented -- Table 5.3.1. It shows combined risks and is comparable to Table 5.2.10.

A comparison of initial risk data (Table 5.3.1) to current risk data (Table 5.2.10) showed a slight increase in frequency of anthropometric, medical/health, and dietary risks reported currently for breastfeeding women, with a decrease in reported "mother of a priority 1 infant."

Infants showed a marked increase in anthropometric, medical/health, and dietary risks from initial to current certification as noted earlier, while there was a marked decrease in the proportion with mothers on WIC during pregnancy.

Children showed a slight decrease in medical/health, dietary, and anthropometric risk currently as compared to initially, and had more certifications that included prevention of regression as a risk factor currently.

5.4 WIC Priority Levels

Because the WIC Program cannot serve all eligible people, a priority system is used to select the neediest applicants when a local agency has reached maximum caseload. The distribution of participants by priority level is a useful way to examine the degree of nutritional risk of the WIC caseload.

Section 1.1 on WIC eligibility describes definitions of the various priority categories. Priority 7 is permitted at State option for previously certified participants who currently have no nutritional risks but who may regress in nutritional or health status without continuation of WIC benefits. In addition, recent regulations allow assignment of high-risk postpartum women to priority levels 3 through 5.

This study examines priorities in two ways. First is the priority reported in agency certification records. Problems with this approach include differing categorization from agency to agency. For example, one agency may have called a child certified for prevention of regression from anemia as a priority level 3, another agency a priority level 5, and another

TABLE 5.3.1

DISTRIBUTION OF COMBINED RISK FACTORS BY PARTICIPANT CATEGORY
FOR INITIAL CERTIFICATION (PERCENT)

RISK CATEGORY	WOMEN	INFANTS		CHILDREN						
	BREASTFEEDING	TOTAL	AGE 1	AGE 2	AGE 3	AGE 4	TOTAL			
<u>Anthropometric</u>	33.0	17.4	38.2	34.5	39.2	33.2	36.1			
Obesity	4.9	2.3	8.2	10.9	9.3	8.9	9.6			
High pre-pregnancy weight for height	4.9	0	NA	NA	NA	NA	NA			
High weight for height	17.6	2.3	8.2	10.9	9.3	8.9	9.6			
Weight gain during pregnancy inadequate or excessive	4.5	0	NA	NA	NA	NA	NA			
Inadequate pregnancy weight gain	3.2	0	NA	NA	NA	NA	NA			
Excessive pregnancy weight gain	1.3	0	NA	NA	NA	NA	NA			
Low pre-pregnancy weight for height	0.0	5.7	11.8	10.1	15.4	11.1	1.2			
Low height for age	0.0	1.9	3.1	23.6	5.7	3.0	3.6			
Low weight for age	0.0	6.5	1.0	.4	.2	.6	.5			
High weight for age	0.0	0	2.6	1.3	1.3	.2	1.3			
Low weight for height	0.7	4.8	11.5	7.9	13.7	7.0	9.9			
Other Anthropometric Risks	5.7	3.0	6.5	5.9	5.2	6.5	5.9			

TABLE 5.3.1 (CONTINUED)

RISK CATEGORY	WOMEN	INFANTS				CHILDREN			
	BREASTFEEDING	TOTAL	AGE 1	AGE 2	AGE 3	AGE 4	TOTAL		
Medical/Health Risks	46.8	6.3	47.1	47.3	48.1	49.0	47.8		
History or presence of anemia	17.4	.9	40.4	40.4	42.0	43.3	41.4		
Presence of other medical problems/conditions	5.2	1.2	8.4	7.2	5.6	7.8	7.1		
Alcohol use/abuse	.3	0	0	0	0	0	0		
Drug use/abuse	0.0	0	0	0	0	0	0		
Smoking	4.1	0	0	0	0	0	0		
Mentally/physically handicapped	0.0	0	0	0	0	0	0		
Hyperemesis (nausea/vomitting)	0.0	.2	0	0	0	0	0		
Handicapped child/congenital abnormality	0.0	0	.9	1.1	.4	.1	.7		
Child or mother w/limited mental capacity or alcohol	0.0	0	0	.1	.1	.5	.2		
Other	4.1	.5	1.3	3.3	3.1	.8	2.4		
Young gravida (<18 years old)	0.4	NA	NA	NA	NA	NA	NA		
Young gravida (<35 years old)	2.3	NA	NA	NA	NA	NA	NA		
Older prima gravida (<35 years old)	0.0	NA	NA	NA	NA	NA	NA		

TABLE 5.3.1 (CONTINUED)

RISK CATEGORY	WOMEN		INFANTS	CHILDREN				
	BREASTFEEDING	TOTAL	TOTAL	AGE 1	AGE 2	AGE 3	AGE 4	TOTAL
High gravida (many pregnancies)	6.0	NA	NA	NA	NA	NA	NA	NA
High parity (many births)	6.7	NA	NA	NA	NA	NA	NA	NA
Other gravida & parity risks	0.0	NA	NA	NA	NA	NA	NA	NA
Short inter-conceptual period	10.8	NA	NA	NA	NA	NA	NA	NA
Multiple fetus preg-nancy	0.5	NA	NA	NA	NA	NA	NA	NA
History or negative birth outcomes	6.6	NA	NA	NA	NA	NA	NA	NA
Obstetric complications during pregnancy	0.0	NA	NA	NA	NA	NA	NA	NA
Caesarian section	0.3	NA	NA	NA	NA	NA	NA	NA
Other pregnancy history risks	1.1	NA	NA	NA	NA	NA	NA	NA
<u>Dietary/Nutritional</u>	31.8	10.7	37.1	'42.2	'39.2	'40.4		40.2
Inadequate nutrient intake	24.9	9.2	36.0	37.0	38.3	37.0		37.2
Excessive caloric intake	0.0	0.0	0.0	0.8	0.6	0.2		0.5
Excessive caffeine intake	0.0	0.0	0.0	0.0	0.0	0.0		0.0

TABLE 5.3.1 (CONTINUED)

RISK CATEGORY	WOMEN BREASTFEEDING	INFANTS TOTAL	CHILDREN				
			AGE 1	AGE 2	AGE 3	AGE 4	TOTAL
Food allergies	0.0	0.0	0.9	1.2	0.1	2.4	1.1
Food faddism	0.0	0.0	0.0	1.7	0.2	0.1	0.7
Excessive formula consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other dietary risks	6.9	1.3	1.1	1.7	1.5	0.8	1.4
<u>Mother on WIC during pregnancy</u>							
	0.0	61.3	5.2	1.3	0.7	1.4	1.8
<u>Nutritional risk in past but not on WIC</u>							
	0.0	13.4	0.3	0.0	0.0	0.0	0.1
		13.4	0.3	0.0	0.0	0.0	0.1
<u>Other family member on WIC</u>							
	25.5	6.5	0.0	0.0	0.0	0.0	0.0
Mother of priority 1 infant	24.5	NA	0.0	0.0	0.0	0.0	0.0
Mother of priority 2 infant	1.0	NA	0.0	0.0	0.0	0.0	0.0
Infant currently breast feeding priority 1 mother	0.1	5.7	0.0	0.0	0.0	0.0	0.0
Infant age 0-6 months	0.0	5.2	0.0	0.0	0.0	0.0	0.0
<u>Prevent regression</u>							
	9.0	1.9	5.5	12.0	5.1	6.2	7.9
		1.9	5.5	12.0	5.1	6.2	7.9
<u>Other</u>							
	7.6	4.1	2.0	2.3	1.2	1.9	1.9
Infant of young mother (<18)	0.0	1.1	0.0	0.0	0.0	0.0	0.0
Other	7.6	3.0	2.0	2.3	1.2	1.9	1.9
% Reporting	25.8	48.4	---	---	---	---	63.1

a priority 7. Also, agencies may not update their priorities as a participant's status changes; a 15 month-old child certified when he was a 10 month-old infant may have a priority 1 (based on infant status) but now should be categorized as a priority 3 at highest, based on child status. These discrepancies are permissible in WIC regulations, but make analysis complex.

The second approach used in the study established uniform definitions of priority levels (including regression as priority 7) and "imputed" these based on nutritional risks reported. Table 5.4.1 and 5.4.3 present the distribution of current and initial priority levels of WIC participants. It should be noted that the "questionable" category includes cases whose categorization appeared inappropriate, as discussed above. Since it was not clear why some of these priority levels were assigned, they have been reported separately.

Current Priority Levels

The distribution of current priority levels is presented in Table 5.4.1, as reported by certification records. Imputed priority levels were created by assigning appropriate risk factors to the priority level definitions from section 1.1. These imputed rankings made it possible to uniformly assign priorities. For this imputation process, all regression cases were coded priority 7, and breastfeeding women were assigned priority levels based on their own, rather than their infants', risks. Although these are not necessarily the case under the regulations, they were necessary analytic strategies.

Table 5.4.2 shows the distribution of imputed current priority levels, and when these data are compared to the reported current priority levels in Table 5.4.1, it appears that fewer participants should have been assigned high priority rankings, while more should have been assigned low priority rankings (especially to priority level 7). Part of the discrepancies may have been due to the imputation assumptions discussed above, e.g., setting all regression to priority 7 instead of doing this at State option. Although this pattern emerged for all participant categories, it was true for breastfeeding women in particular -- 69.2 percent should have qualified for priority 1, whereas 88.3 percent actually did, and 29.2 percent should have been assigned priority level 4, whereas only 10.2 percent were. Part of the problem is that WIC policy permits breastfeeding women to be given the same priority level as her infant. This study could not link priority levels of the infants, so it used the women's own risks only in determining priorities.

Despite these discrepancies, the patterns of priority level distribution were similar for reported and imputed priority levels at current certification. The substantial majority of participants (69.8 to 74.9 percent) were in the first three priority levels. Almost all the pregnant and breastfeeding women and infants were in the first two priority levels. Most children were in priority level 3.

Initial Priority Levels

As was the case for risk factors, since pregnant and postpartum women complete only one certification, their current and initial certifications are synonymous. Therefore, their their initial priority rankings are the same as those presented in Table 5.4.1 as current rankings.

TABLE 5.4.1
CURRENT REPORTED WIC PRIORITY GROUP BY PARTICIPANT CATEGORY (PERCENT)

PRIORITY	WOMEN				INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
1	91.2	88.3	NA	63.3	47.4	NA	NA	NA	NA	NA	26.8
2	NA	NA	NA	NA	40.5	NA	NA	NA	NA	NA	10.3
3	NA	NA	NA	NA	NA	75.9	73.0	76.5	65.7	73.6	37.8
4	8.6	10.4	NA	6.3	10.5	NA	NA	NA	NA	NA	4.1
5	NA	NA	NA	NA	NA	17.9	24.5	20.3	30.2	22.2	11.4
6	NA	NA	90.3	27.1	NA	NA	NA	NA	NA	NA	6.3
7	NA	0.2	0.2	0.1	0.4	0.7	0.8	1.2	1.5	1.0	0.6
Questionable*	<u>0.2</u>	<u>1.1</u>	<u>9.4</u>	<u>3.1</u>	<u>1.2</u>	<u>5.4</u>	<u>1.8</u>	<u>2.0</u>	<u>2.6</u>	<u>3.3</u>	<u>2.7</u>
Total	100.0	100.0	99.9	99.9	100.0	99.9	100.1	100.0	100.0	100.1	100.0
% Reporting	91.8	91.2	91.5	91.6	92.4	91.4	91.0	89.5	91.3	90.9	91.4
Percent of Overall Caseload	12.5	3.8	6.9	23.3	25.4	18.3	14.4	10.4	8.2	51.3	100.0

*Includes cases whose categorization appeared inappropriate.

TABLE 5.4.2
IMPUTED CURRENT PRIORITY LEVEL (PERCENT)

PRIORITY	WOMEN				INFANTS	CHILDREN					TOTAL WIC PARTICIPANTS
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL		AGE 1	AGE 2	AGE 3	AGE 4	TOTAL	
1	86.6	69.2	NA	57.8	44.7	NA	NA	NA	NA	NA	24.8
2	NA	NA	NA	NA	38.3	NA	NA	NA	NA	NA	9.7
3	NA	NA	NA	NA	NA	72.6	69.1	70.4	57.9	68.8	35.3
4	13.4	29.2	NA	11.9	13.8	NA	NA	NA	NA	NA	6.3
5	NA	NA	NA	NA	NA	21.9	23.2	22.3	30.8	23.8	12.2
6	NA	NA	97.1	29.2	NA	NA	NA	NA	NA	NA	6.8
7	NA	1.6	2.9	1.1	3.2	5.5	7.7	7.4	11.3	7.4	4.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.1	100.0	100.0	100.0
% Reporting Percent of Overall Caseload	100.0	99.8	99.8	99.9	100.0	99.6	99.8	99.6	100.0	99.7	99.8

Tables 5.4.3 and 5.4.4 show the initial priority levels for breastfeeding women, infants and children in their respective categories. The distributions generally were similar to those for current certifications, but the largest discrepancy was that infants were more often priority 2 in their initial certification than in their current certification. This is logical since the priority 2 level is only for infants under 6 months old, which will be more common for initial certifications.

5.5 Hematological Measures

The analysis of hematological data is difficult because of a lack of common tests and standards to determine anemia. Hematological measures of anemia are commonly required for all participants, except infants under six months and children who were normal at their last certification. The most common test was the hematocrit, used for about four-fifths of WIC participants. Hematocrit measures the packed percent volume of red blood cells. Hemoglobin values were reported for about one-quarter of the participants. This measures the amount of hemoglobin -- the iron-containing and oxygen-carrying molecule of the blood. Some had both tests. Regulations also permit use of other measures, such as free erythrocyte protoporphyrin.

Standards for the determination of anemia vary according to the type of test and are not uniform across States or even expert authorities. One benchmark set of measures is those most typically used by WIC State agencies. The Food and Nutrition Service reports these as the "modal" definitions of anemia, based on FY 1985 WIC State Plans:

<u>Category</u>	<u>Hemoglobin</u> <u>Less than:</u>	<u>Hematocrit</u> <u>Less than:</u>
Pregnant Women	11 gms/dl	33%
Breastfeeding Women	12 gms/dl	37%
Postpartum Women	12 gms/dl	36%
Infants (under 1 year)	11 gms/dl	39%
Children (1 to 5 years)	11 gms/dl	34%

It should be mentioned that standards for pregnant women are lower because, as pregnancy progresses, plasma volume expands more rapidly than the creation of new red blood cells, so some reduction in hematocrit or hemoglobin is normal and expected.

Another method of comparing status for infants and children is by hematocrit- or hemoglobin-for-age percentiles, using baseline data from the 1971 - 1974 Health and Nutrition Examination Survey (HANES I) and a program from the Centers for Disease Control. These data need be interpreted with caution because of possible laboratory analysis problems for hemoglobin values in HANES I and varying laboratory standards used in WIC clinics. A further problem for this study was that the CDC program used default levels if certain information (such as city altitude) were not known, as was the case in this study.

TABLE 5.4.3
INITIAL, REPORTED WIC PRIORITY GROUP BY PARTICIPANT CATEGORY
(PERCENT)

PRIORITY	BREASTFEEDING WOMEN	INFANTS	CHILDREN				
			AGE 1	AGE 2	AGE 3	AGE 4	TOTAL
1	94.0	28.7	NA	NA	NA	NA	NA
2	NA	67.0	NA	NA	NA	NA	NA
3	NA	NA	66.3	76.8	74.9	78.8	75.1
4	4.9	4.1	NA	NA	NA	NA	NA
5	NA	NA	18.8	19.1	19.6	18.1	19.0
6	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	0.2	0.0	0.4	0.0	0.1
Questionable	1.1	0.2	14.7	4.1	5.1	3.1	5.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% Reporting	21.8	57.1	23.5	72.4	70.4	68.8	53.9

TABLE 5.4.4
IMPUTED INITIAL PRIORITY LEVEL (PERCENT)

PRIORITY	BREASTFEEDING WOMEN	INFANTS	CHILDREN				
			AGE 1	AGE 2	AGE 3	AGE 4	TOTAL
1	67.9	20.5	NA	NA	NA	NA	NA
2	NA	72.0	NA	NA	NA	NA	NA
3	NA	NA	70.0	69.5	74.9	71.9	71.5
4	32.1	6.0	NA	NA	NA	NA	NA
5	NA	NA	25.1	24.3	22.1	23.9	23.8
6	NA	NA	NA	NA	NA	NA	NA
7	0.0	1.4	4.8	6.3	3.0	4.1	4.7
Total	100.0	99.9	99.9	100.1	100.0	99.9	100.0
% Reporting	25.7	48.4	23.5	72.3	70.1	68.8	63.1

Tables 5.5.1 to 5.5.4 show hemoglobin and hematocrit data for WIC participants presented in a number of ways. Using the modal WIC anemia criteria discussed above, the following percentages of participants were anemic:

<u>Participant Category</u>	<u>Hemoglobin</u>	<u>Hematocrit</u>
Pregnant Women	10.1	13.3
Breastfeeding Women	30.5	27.6
Postpartum Women	50.5	32.5
Women (Total)	25.5	21.4
Infants	31.0	36.1
One-year-olds	19.7	24.1
Two-year-olds	16.9	21.0
Three-year-olds	14.4	21.8
Four-year-olds	11.0	18.5
Children (Total)	16.4	21.8
Total WIC Participants	22.2	25.3

Overall, about one-fifth to one-quarter of WIC participants were anemic using these standards, with anemia more common among postpartum and breastfeeding women and infants. Since blood measures of infants under 6 months are not required, the infant data primarily measures status of infants 6 - 12 months old. The high level of anemia among postpartum and breastfeeding women may be partially attributable to the recent physiological stress of pregnancy and due to selective enrollment into WIC.

Compared to nationally representative data for children collected from HANES II (1976 - 1980), the prevalence of low hemoglobin values is much more common in WIC children, and the prevalence of low hematocrits is somewhat more common among WIC children. This probably reflects the higher risk profile of WIC infants and children. Some differences may also be due to differing laboratory methods.

Similarly, the hemoglobin- and hematocrit-for-age percentiles based on HANES I data indicate a greater than expected prevalence of low values compared to national data. This is particularly true for the hematocrits. The discrepancy with hemoglobin data may partially be due to the previously mentioned problem of HANES I hemoglobin analyses which were used as baseline standards.

5.6 Other Infant Characteristics

It was found that 12.9 percent of the infants were being breastfed at the time of their most current certification, with 83 percent reporting. Of those who were not being breastfed currently, an additional 2 percent had been breastfed in the past; however, data were available only infrequently concerning past breastfeeding habits.

TABLE 5.5.1

HEMOGLOBIN MEASURE BY PARTICIPANT CATEGORY
FOR CURRENT CERTIFICATION*

HEMOGLOBIN	WOMEN					
	PREGNANT		BREASTFEEDING		POSTPARTUM	
	%	Cum %	%	Cum %	%	Cum %
<10.0	1.5	1.5	3.8	3.8	0.7	0.7
10.0 - 10.4	3.8	5.3	8.5	12.3	6.8	7.5
10.5 - 10.9	4.8	10.1	5.0	17.3	13.5	21.0
11.0 - 11.4	8.5	18.6	4.5	21.8	12.6	33.6
11.5 - 11.9	13.9	32.5	8.7	30.5	16.9	50.5
12.0 - 12.4	26.0	58.5	12.3	42.8	7.6	58.1
12.5 - 12.9	18.4	76.9	14.9	57.7	8.8	66.9
13.0 - 13.4	8.5	85.4	13.2	70.9	16.9	83.6
13.5 - 13.9	5.3	90.7	8.3	79.2	7.3	91.1
14.0 - 14.4	7.8	98.5	10.2	89.4	6.0	97.1
14.5 - 14.9	1.1	99.6	4.6	94.0	0.4	17.5
15.0+	0.4	100.0	6.0	100.0	2.5	100.0
Median	12.3		12.7		11.9	
Mean	12.3		12.6		12.2	
Standard Deviation	1.1		1.5		1.4	
% Reporting	39.7		30.6		39.5	

TABLE 5.5.1 (CONTINUED)

HEMOGLOBIN	CHILDREN											
	INFANTS			AGE 1			AGE 2			AGE 3		
	%	Cum %	%	%	Cum %	%	%	Cum %	%	%	Cum %	TOTAL
<10.0	13.1	13.1	3.5	3.5	3.5	4.5	4.5	4.5	2.1	2.1	0.3	3.1
10.0 - 10.4	9.8	22.9	7.3	10.8	10.8	4.9	9.4	9.4	8.6	10.7	4.2	6.4
10.5 - 10.9	8.1	31.0	8.9	19.7	19.7	7.5	16.9	16.9	3.7	14.4	6.5	7.2
11.0 - 11.4	23.0	54.0	15.1	34.8	34.8	15.2	32.1	32.1	11.7	26.1	17.7	14.8
11.5 - 11.9	6.5	60.5	15.2	50.0	50.0	15.9	48.0	48.0	20.5	46.6	11.9	16.0
12.0 - 12.4	16.8	77.3	15.6	65.6	65.6	20.5	68.5	68.5	17.9	64.5	17.7	17.8
12.5 - 12.9	4.7	82.0	21.1	86.7	86.7	10.7	79.2	79.2	13.5	78.0	11.1	15.0
13.0 - 13.4	13.5	95.5	5.2	91.9	91.9	10.6	89.8	89.8	15.1	93.1	15.3	10.0
13.5 - 13.9	0.7	96.2	2.7	94.6	94.6	4.1	93.9	93.9	2.2	95.3	5.3	3.4
14.0 - 14.4	0.9	97.1	0.9	95.5	95.5	1.5	95.4	95.4	2.0	97.3	6.0	2.0
14.5 - 14.9	0.1	97.2	2.3	97.8	97.8	0.0	95.4	95.4	0.6	97.9	2.9	1.4
15.0+	2.9	100.1	2.3	100.1	100.1	4.6	100.0	100.0	1.9	99.8	1.2	2.7
Median	11.2		11.9		12.0				12.0		12.0	12.0
Mean	11.5		11.9		12.0				12.0		12.2	11.9
Standard Deviation	1.6		1.4		1.3				1.1		1.2	1.3
% Reporting	13.1		27.9		27.7				24.2		22.8	26.3

* % = Simple frequency %, Cum % = Cumulative frequency %

TABLE 5.5.2

CURRENT HEMOGLOBIN PERCENTILE DISTRIBUTION BY PARTICIPANT CATEGORY,
USING CDC METHODOLOGY*

HEMOGLOBIN PERCENTILE	INFANTS % 'Cum %	CHILDREN							
		AGE 1		AGE 2		AGE 3		AGE 4	
		%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %
0.1 - 5.0	7.4	3.6	3.6	6.1	6.1	10.5	10.5	8.3	6.3
5.1 - 25.0	24.0	19.0	22.6	23.3	29.4	23.9	34.4	29.4	29.0
25.1 - 50.0	26.2	25.5	48.1	28.4	57.8	26.7	61.1	25.2	55.5
50.1 - 75.0	22.1	29.6	77.6	21.1	79.9	23.3	84.5	21.0	80.5
75.1 - 95.0	19.2	17.2	94.9	15.4	95.3	12.3	96.8	12.1	95.5
95.0 - 99.8	1.1	5.1	100.0	4.7	100.0	3.2	100.0	4.0	100.0
Median	42.9	51.8		46.4		36.9		33.7	44.5
Mean	43.3	49.6		46.6		41.2		41.1	45.9
Standard Deviation	28.8	26.8		28.4		27.3		30.3	28.1
% Reporting	6.7	27.1		27.1		24.1		22.8	25.8

* % = Simple frequency %, Cum % = Cumulative frequency %

TABLE 5.5.3

HEMATOCRIT MEASURES BY PARTICIPANT CATEGORY FOR CURRENT CERTIFICATION*

HEMATOCRIT	WOMEN							
	PREGNANT		BREASTFEEDING		POSTPARTUM		INFANTS	
	%	Cum %	%	Cum %	%	Cum %	%	Cum %
<31	4.5	4.5	3.9	3.9	1.9	1.9	8.4	8.4
31	4.0	8.5	2.6	6.5	2.7	4.6	5.2	13.6
32	4.8	13.3	2.6	9.1	3.7	8.3	0.4	24.0
33	9.2	22.5	3.0	12.1	4.4	12.7	2.1	36.1
34	8.3	30.8	3.1	15.2	6.8	19.5	2.0	48.1
35	10.9	41.7	5.5	20.7	13.0	32.5	7.7	65.8
36	12.9	54.6	6.9	27.6	7.5	40.0	8.7	74.5
37	12.0	66.6	6.7	34.3	7.2	47.2	9.3	83.8
38	10.6	77.2	9.3	43.6	14.9	62.1	7.6	91.4
39	6.3	83.5	9.3	52.9	5.3	67.4	2.6	94.0
40	7.1	90.6	11.8	64.7	9.8	77.2	1.2	95.2
41+	9.5	100.1	35.3	100.0	22.8	100.0	4.9	100.1
Median	36.1		39.0		37.7		34.0	
Mean	36.2		38.8		37.9		34.8	
Standard Deviation	3.4		4.2		4.3		4.0	
% Reporting	80.8		80.3		78.1		32.5	

TABLE 5.5.3 (CONTINUED)*

HEMATOCRIT	CHILDREN									
	AGE 1		AGE 2		AGE 3		AGE 4		TOTAL	
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
<31	2.8	2.8	5.1	5.1	4.0	4.0	0.7	0.7	3.4	3.4
31	3.2	6.0	2.0	7.1	1.5	5.5	2.4	3.1	2.4	5.8
32	7.1	13.1	5.6	12.7	5.3	10.8	7.8	10.9	6.4	12.2
33	11.0	24.1	8.3	21.0	11.0	21.8	7.6	18.5	9.7	21.9
34	16.8	40.9	12.4	33.4	15.2	37.0	12.9	31.4	14.6	36.5
35	11.3	52.2	16.9	50.3	12.1	49.1	12.0	43.4	13.1	49.6
36	15.7	67.9	17.3	67.6	12.9	62.0	13.5	56.9	15.2	64.8
37	12.8	80.7	10.1	77.7	12.3	74.3	9.4	66.3	11.4	76.2
38	5.8	86.5	10.3	88.0	12.4	86.7	14.9	81.2	9.9	86.1
39	4.6	91.1	5.0	93.0	6.0	92.7	7.6	88.8	5.5	91.6
40	4.4	95.5	5.2	98.2	4.3	97.0	4.8	93.6	4.6	96.2
41+	4.6	100.1	1.9	100.1	2.9	99.9	6.5	100.1	3.8	100.0
Median	35.0		35.0		36.0		36.0		36.0	
Mean	35.5		35.4		36.0		36.0		35.6	
Standard Deviation	3.1		2.8		2.8		2.9		2.9	
% Reporting	80.3		81.8		83.7		81.1		80.6	

* % = Simple frequency %, Cum % = Cumulative frequency %

CURRENT HEMATOCRIT PERCENTILE DISTRIBUTION BY PARTICIPANT CATEGORY USING CDC METHODOLOGY*

* % = Simple frequency, Cum % = Cumulative frequency %

While data were available on only 53 percent of the infants, of those that did report, 12.5 percent were born prematurely; however, as will be shown in a later section, only 8.7 percent of all infants on WIC weighed less than 2,500 grams at birth, implying that a number of premature infants were born with an adequate birth weight. With even fewer reporting (20 percent), other data showed that 15.5 percent of all infants were small for gestational age or small for date.

CHAPTER 6

WIC FOOD PACKAGE CONTENTS

Overview

This chapter describes the contents of monthly WIC food packages prescribed by local staff, as compared to the maximum allowable quantities. State and local staff may modify or "tailor" food packages in response to nutrition policies and/or individual needs.

The primary benefit of the WIC Program is the provision of nutritious, supplemental foods. Federal regulations specify maximum monthly food packages, as shown in Table 1.2.1. Chapter 3 discussed State and local tailoring policies. The study examined the actual types and quantities of foods prescribed for participants.

Overall, about one quarter (27.1 percent) of the participants received maximum food packages, and the remainder received less than the maximum. Receiving maximum amounts was most common among infants three months old or younger (76.5 percent), breastfeeding women (46.1 percent) and pregnant women (36.6 percent). It was least common among children (overall 14.5 percent), especially one-year-olds (11.6 percent) and 4 - 12 month old infants (12.9 percent).

The items most frequently tailored were milk products (including fresh fluid milk, certain cheeses, nonfat dried milk and/or evaporated milk). Three quarts of milk can be exchanged for one pound of cheese. Overall, about one-third (37 percent) of the women and children received the maximum level of milk, while two-thirds (63 percent) received less than maximum. For cheese, the mean quantity was 1.8 pounds for women and 1.4 pounds for children.

Other items frequently provided in maximum quantities included: juice (56.1 percent of people in eligible categories), cereal (56.9 percent of people in eligible categories), and peanut butter/dried beans/peas (59.6 percent of people in eligible categories). Eggs are provided at the maximum level (2 to 2 1/2 pounds) for about seven-eighths of the people in eligible categories (86.9 percent). Maximum levels of infant formula are provided at maximum for most infants (75.8 percent for 0 to 3 month olds, and 59.6 percent for 4 to 12 month olds).

6.1 Introduction to Food Package Analyses

Food packages are issued to all WIC participants after they have become certified for the program. Types and quantities of food prescribed that WIC participants received were analyzed. Such data tell what a person was prescribed, which is not necessarily the same as the food issued by local agencies or selected by participants. Such data were not available at a reasonable data collection cost. Also, data collection involved translation of food package codes into food items and quantities using agency codebooks. Further complicating the problem was the fact that prescribed food package items and quantities generally were presented as a series of choices. For example, a person could receive a certain amount of liquid milk, powdered milk, and/or evaporated milk. In addition, up to four pounds of cheese could be substituted for liquid milk at the rate of one pound of cheese for each three quarts of milk. It was not known in such instances what the person actually received or what choice the individual made when options were allowed. Analysis was complicated by the fact that choice of one option, e.g., taking a pound of cheese, meant giving up some or all of another option, e.g., giving up three quarts of milk. See Table 1.2.1 for maximum allowable food item amounts.

In order to analyze the food items, it became necessary to report minimum and maximum quantities and to convert everything to a single food item equivalency. A minimum food quantity meant the amount of that item received when the maximum amount of all alternate food items were given. Likewise, a maximum food quantity was the maximum amount of that item received if the minimum amount of all other food items were issued. So, for example, if 24 quarts were the maximum amount of milk that a person could get, and the person could substitute up to three pounds of cheese, the minimum milk would be 15 quarts, the maximum milk would be 24 quarts, the minimum cheese would be 0 pounds, and the maximum cheese would be 3 pounds (exchanging three quarts of milk for each pound of cheese). A person also might choose to take some of the milk allowance in the form of evaporated and/or dry milk, and maximum amounts of these items, if offered, would further diminish the minimum amount of liquid milk.

In order to determine food quantities, then, all milk and cheese were converted to a maximum equivalent of liquid milk, all eggs were converted to fresh eggs, all juice was converted to single strength adult juice, and all formula was converted to ready-to-feed. The specific conversion factors for food items requiring conversion are provided below, based on FNS policy. The quantity of a given food item would be the sum of each of the converted items plus any specified amounts of the item being converted to. The maximum prescribed amount of each food item was added to the minimum amounts of the optional items (e.g, maximum single-strength-juice was added to the minimum amounts of frozen concentrate and infant juice).

Conversion to milk (in quarts)

$$\begin{aligned} \text{Milk in quarts} = & [2 \times (\text{number of half gallons of liquid milk})] + \\ & [4 \times (\text{number of gallons of liquid milk})] + \\ & [(\text{number of ounces of evaporated milk})/13] + \\ & [5 \times (\text{number of pounds of dry milk})] + \\ & [3 \times (\text{number of pounds of cheese})] + \\ & [\text{quarts of liquid milk reported}] \end{aligned}$$

Conversion to fresh eggs (in dozens)

Fresh eggs = $[1.3 \times (\text{number of pounds of dried eggs})] +$
 $[\text{number of eggs in dozens reported}]$

Conversion to single-strength juice (in ounces)

Single-strength juice = $[4 \times (\text{number of ounces of frozen concentrate})]$
 $+ [1.46 \times (\text{number of ounces of infant juice})] +$
 $[\text{number of oz. single-strength juice reported}]$

Conversion to ready-to-feed formula (in ounces)

Ready-to-feed Formula = $2 \times (\text{number of ounces of concentrated formula}) +$
 $6.3 \times (\text{number of ounces of powdered formula})$

Although Federal regulators prescribe the maximum quantities and types of WIC foods, State and local agencies may modify or "tailor" the actual foods provided to participants. Tailoring encompasses a range of types of modifications which may be based on individual needs or preferences or on State or local nutrition policies. Tailoring may entail reducing the quantity of food provided or further specifying the types of food provided. Examples of tailoring for individual needs or preferences include providing a substantial amount of the milk foods as cheese for a lactose-intolerant child or only providing dried beans or peas instead of the higher calorie peanut butter to an obese woman.

Examples of tailoring for State or local nutrition policies include: providing lesser levels of milk for one- or two-year-olds than for three- and four-year old children or further limiting the sugar content of cereals. This study carefully examined changes in the quantities of food prescribed to participants but generally was not able to examine the specific types of food (e.g., whole versus low-fat versus skim milk). The specific types of food prescribed were not generally reported in WIC records.

Within some food categories, participants were allowed to select certain alternatives after the food package had been prescribed. Among the choices typically available was the choice between receiving maximum milk or reducing the amount of milk and substituting cheese, the choice between single- strength and frozen juice, the choice between types of formula, and the choice between peanut butter on the one hand and dried peas or beans on the other.

Choices rarely were available after prescription for selecting cheese, since only 2.7 percent of the participants could choose to substitute cheese for some of their milk allowance. However, the choice of type of juice was available to 48.2 percent of WIC participants, the choice of type of formula was available to 12.9% of the participants or their guardians following prescription, and 42.4% could choose between peanut butter and dried peas or beans (for those who are prescribed these food items).

6.2 Food Package Contents

Six categories of food items were analyzed: milk, formula, eggs, juice, peas/beans/peanut butter, and cereal. Tables 6.2.1 - 6.2.6 present distributions of food quantities prescribed per participant category, and

Table 6.2.7 shows the percent of participants receiving maximum allowances for each food item as well as the total food package. The federal maximum food item quantities are presented as the last values for which there are valid data for each participant category. For example, in Table 6.2.1 the maximum amount of liquid milk is 28 quarts for pregnant women but 24 quarts for postpartum women.

Milk and Cheese

Examining Table 6.2.1 and 6.2.7 shows that most pregnant and breastfeeding women received their maximum milk allotment of 28 quarts per month (54.3 percent and 60.4 percent, respectively); however, postpartum women and children generally did not receive their maximum milk allowance (only 37.9 percent and 30.9 percent, respectively, received maximum quantities). Postpartum women received an average of 21 quarts of milk, as did children, but among children, there was a slight increase in the amount of milk prescribed as children got older, especially when children went from one to two years of age.

Cheese was reported in Table 6.2.2 as a subcategory of milk. Breastfeeding women were prescribed the most cheese, followed closely by pregnant women. Postpartum women received the least (usually one pound or none). Approximately 70 percent of all women received one or two pounds of cheese.

Children tended to be given significantly less cheese than women as a whole, with 61.3 percent receiving at most one pound. Very few (1.8 percent) received a maximum of 4 pounds of cheese.

Eggs

Regarding eggs (see Tables 6.2.2 and 6.2.7), 86.9% of total participants were prescribed the maximum allowance of 2 to - 2 1/2 dozen. Exactly 2 dozen eggs were issued to 74.0 percent of the women and children, with women being prescribed slightly greater quantities than children.

Juice

Different quantities of juice are allowed for the various participant categories: 192 ounces of single strength for postpartum women, 63 ounces of infant juice for infants who were between 4 and 12 months of age, and 276 - 288 ounces of juice for everyone else (see Table 6.2.3). Examining Tables 6.2.3 and 6.2.7 shows that more than half (56.1 percent) the participants were allowed maximum amounts of juice. Infants appeared to receive the least amounts and were least likely to receive their maximum allowance, and only about half the children seemed to receive their maximum juice allotment. For the women, however, more than three-fourths in each category were prescribed the maximum quantity.

Formula

Formula was rarely given to anyone except infants: only 0.2 percent of women and 2.0 percent of children on WIC received any formula based on special dietary need (see Table 6.2.4). The special dietary need food package provides formula to children or women with special needs, such as phenylketonuria or other metabolic diseases. On the other hand, 99.5

TABLE 6.2.1.
MILK EQUIVALENTS (INCLUDING CHEESE) PRESCRIBED TO WIC PARTICIPANTS BY WIC PARTICIPANT CATEGORY (QUARTS).*

Milk Equivalents (Quarts)	WOMEN									
	PREGNANT		BREASTFEEDING		POSTPARTUM		TOTAL			
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-14	1.8	1.8	0.9	0.9	4.7	4.7	2.5	2.5	2.5	2.5
15	0.4	2.2	0.3	1.2	7.6	12.3	2.5	2.5	2.5	5.0
16	0.1	2.3	0.2	1.4	3.8	16.1	1.2	1.2	1.2	6.2
17	0.0	2.3	0.0	1.4	0.1	16.2	0.0	0.0	0.0	6.2
18	2.0	4.3	0.3	1.7	4.5	20.7	2.5	2.5	2.5	8.7
19	0.4	4.7	1.6	3.3	11.9	32.6	4.0	4.0	4.0	12.7
20	1.0	5.7	0.2	3.5	4.4	37.0	1.9	1.9	1.9	14.6
21	0.7	6.4	0.6	4.1	6.3	43.3	2.4	2.4	2.4	17.0
22	3.0	9.4	3.2	7.3	13.0	56.3	6.0	6.0	6.0	23.0
23	6.8	16.2	2.0	9.3	5.6	61.9	5.7	5.7	5.7	28.7
24	6.1	22.3	11.2	20.5	37.9	99.8	16.5	16.5	16.5	45.2
25	0.8	23.1	0.2	20.7			0.5	0.5	0.5	45.7
26	6.1	29.2	5.7	25.4			4.2	4.2	4.2	49.9
27	16.4	45.6	13.2	39.6			10.9	10.9	10.9	60.8
28	54.3	99.9	60.4	100.0			39.0	39.0	39.0	99.8
Median	28		28		22		26		26	
Mean	26.2		26.6		20.9		24.7		24.7	
Standard Deviation	3.4		2.6		3.4		3.3		3.3	
Percent Reporting	99.9		100.0		100.0		99.9		99.9	

TABLE 6.2.1 (CONTINUED)

TABLE 6.2.2.
QUANTITIES OF CHEESE (ALSO COUNTED IN MILK IN TABLE 6.2.1) AND EGGS PRESCRIBED TO WIC
PARTICIPANTS BY PARTICIPANT CATEGORY.*

QUANTITY	WOMEN									
	PREGNANT		BREASTFEEDING		POSTPARTUM		TOTAL			
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
<u>Cheese (Pounds)**</u>										
0	3.8	3.8	5.3	5.3	7.5	7.5	5.2	5.2		
1	33.5	37.3	23.2	28.5	45.4	52.8	35.4	40.6		
2	39.3	76.5	41.7	70.2	27.1	79.9	36.0	76.6		
3	15.8	92.3	19.5	89.7	14.9	94.9	16.1	92.7		
4	7.7	100.0	10.3	100.0	5.1	100.0	7.3	100.0		
>4	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0		
Median	2.0		2.0		1.0		2.0			
Mean	1.9		2.1		1.6		1.8			
Standard Deviation	1.0		1.0		1.0		1.0			
Percent Reporting	99.9		100.0		100.0		99.9			
<u>Eggs (Dozens)</u>										
0	0.1	0.1	1.5	1.5	0.1	0.1	0.3	0.3		
1	2.1	2.2	2.6	4.1	13.6	13.7	5.6	5.9		
2	79.6	81.8	77.3	81.4	76.2	89.9	78.2	84.1		
2 1/2	18.3	100.1	18.5	99.9	10.2	100.1	15.9	100.0		
Median	2.0		2.0		2.0		2.0			
Mean	2.1		2.0		1.9		2.0			
Standard Deviation	0.3		0.4		0.4		0.3			
Percent Reporting	99.9		100.0		100.0		99.9			

TABLE 6.2.2. (CONTINUED)

QUANTITY	CHILDREN								TOTAL WOMEN AND CHILDREN\$	
	AGE 1		AGE 2		AGE 3		AGE 4		TOTAL	
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
<u>Cheese (Pounds)**</u>										
0	21.0'	21.0	11.2'	11.2	9.3'	9.3	8.4'	8.4	13.9	11.2'
1	46.6'	67.6	51.1'	62.3	45.6'	54.9	45.4'	53.8	47.5	43.7'
2	21.6'	89.2	28.4'	90.7	34.6'	89.5	36.7'	90.5	28.6	30.9'
3	8.6'	97.8	6.6'	97.3	7.6'	97.1	6.7'	97.2	7.5	10.2'
4	2.2'	100.0	2.7'	100.0	2.9'	100.0	2.6'	99.8	2.6	1.8'
>4	0.0'	100.0	0.0'	100.0	0.0'	100.0	0.1'	99.9	0.0	0.0'
Median	1.0		1.0		1.0		1.0		1.0	1.3
Mean	1.2		1.4		1.5		1.5		1.4	1.5
Standard Deviation	1.0		0.9		0.9		0.9		1.0	1.0
Percent Reporting	100.0		100.0		100.0		100.0		100.0	100.0
<u>Eggs (Dozens)</u>										
0	3.9'	3.9	1.1'	1.1	1.4'	1.4	1.3'	1.3	2.2	1.6'
1	13.8'	17.7	14.0'	15.1	13.3'	14.7	16.9'	18.2	14.3	11.6'
2	75.5'	93.2	71.8'	86.9	69.7'	84.4	68.0'	86.2	72.1	74.0'
2 1/2	6.7'	99.9	13.0'	99.9	15.7'	100.0	13.8'	100.0	11.4	12.8'
Median	2.0		2.0		2.0		2.0		2.0	2.0
Mean	1.8		1.9		1.9		1.9		1.9	1.9
Standard Deviation	0.5		0.5		0.5		0.5		0.5	0.4
Percent Reporting	100.0		100.0		100.0		100.0		100.0	100.0

* % = Simple Frequency Percent, Cum % = Cumulative Frequency Percent.

\$ Infants not included among total participants.

** Cheese is a subcategory of milk and was converted to liquid milk equivalents in Table 6.2.1.

TABLE 6.2.3.
QUANTITIES OF JUICE AS PRESCRIBED TO WIC PARTICIPANTS BY PARTICIPANT CATEGORY.*

JUICE (OUNCES)	WOMEN									
	PREGNANT		BREASTFEEDING		POSTPARTUM		TOTAL			
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
0	0.3	0.3	0.4	0.4	0.0	0.0	0.2	0.2		
1 - 62	0.0	0.3	0.1	0.5	0.3	0.3	0.1	0.3		
63	0.0	0.3	0.0	0.5	0.0	0.3	0.0	0.3		
64 - 91	0.1	0.4	0.4	0.9	0.1	0.4	0.1	0.4		
92	0.0	0.4	0.0	0.9	0.9	1.3	0.3	0.7		
93 - 137	1.5	1.9	0.3	1.2	7.7	9.0	3.2	3.9		
138	1.4	3.3	2.7	3.9	6.2	15.2	3.1	7.0		
139 - 183	1.6	4.7	0.6	4.5	4.4	19.6	2.3	9.3		
184	3.2	8.1	7.0	11.5	34.0	53.6	13.0	22.3		
185 - 191	0.0	8.1	0.0	11.5	0.1	53.6	0.0	22.3		
192	5.4	13.5	0.8	12.3	46.4	100.1	16.9	39.2		
193 - 275	10.9	24.4	12.2	24.5			7.8	47.0		
276	63.5	87.9	63.1	87.6			44.4	91.4		
277 - 287	0.3	88.2	0.2	87.8			0.2	91.6		
288	11.8	100.0	12.2	100.0			8.3	99.9		
Median	276		276		184		276			
Mean	259.6		259.8		177.6		235.0			
Standard Deviation	40.4		41.6		24.1		35.7			
Percent Reporting	99.9		100.0		100.0		99.9			

TABLE 6.2.3. (CONTINUED)

JUICE (OUNCES)	INFANTS 4 - 12 MONTHS OLD	C H I L D R E N										TOTAL		TOTAL WIC PARTICIPANTS	
		AGE 1		AGE 2		AGE 3		AGE 4		TOTAL		TOTAL		TOTAL WIC PARTICIPANTS	
		%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
0	8.3	1.4	1.4	0.2	0.2	0.0	0.0	0.0	0.0	0.6	0.6	1.6	1.6		
1 - 62	4.8	0.6	2.0	0.0	0.2	0.0	0.0	0.4	0.4	0.3	0.9	0.9	2.5		
63	0.8	0.0	2.0	0.0	0.2	0.0	0.0	0.0	0.4	0.0	0.9	0.1	2.6		
64 - 91	12.5	0.1	2.1	0.1	0.3	0.3	0.3	0.0	0.4	0.1	1.0	2.0	4.6		
92	71.2	0.3	2.4	0.1	0.4	0.1	0.4	0.3	0.7	0.2	1.2	10.8	15.4		
93 - 137	2.4	5.3	7.7	1.7	2.1	4.2	4.6	3.3	4.0	3.7	4.9	3.4	18.8		
138		14.0	21.7	7.8	9.9	8.7	13.3	8.0	12.0	10.2	15.1	6.8	25.6		
139 - 183		1.5	23.2	2.0	11.9	0.6	13.9	1.2	13.2	1.3	16.4	1.4	27.0		
184		10.3	33.5	14.9	26.8	12.4	26.3	14.0	27.2	12.6	29.0	10.8	37.8		
185 - 191		0.1	33.6	0.0	26.8	0.0	26.3	1.3	28.4	0.2	29.2	0.1	37.9		
192		8.8	42.2	10.4	36.0	9.8	36.1	12.5	41.0	9.7	38.9	10.1	48.0		
193 - 275		9.5	51.9	43.9	46.4	11.0	46.1	8.3	49.3	9.4	48.3	7.4	55.4		
276		44.0	95.9	0.1	90.3	7.2	93.3	39.8	89.1	44.0	92.3	37.5	92.9		
277 - 287		0.3	96.2	9.6	90.4	0.3	93.6	0.2	89.3	0.2	92.5	0.2	93.1		
288		3.7	99.9	9.6	100.0	6.1	99.7	10.6	99.9	6.9	99.4	6.2	99.3		
Median	92.0	256.0		275.0		275.0		275.0		276.0		248.5			
Mean	81.7	221.3		236.0		233.8		231.3		229.6		208.9			
Standard Deviation	26.2	66		53.3		55.8		56.6		59.6		48.2			
Percent Reporting	100.0	100.0		100.0		100.0		100.0		100.0		99.9			

* % = Simple Frequency Percent, Cum % = Cumulative Frequency Percent.

TABLE 6.2.4.
QUANTITIES OF FORMULA AS PRESCRIBED TO WIC PARTICIPANTS BY PARTICIPANT CATEGORY.*

FORMULA (OUNCES)	WOMEN									
	PREGNANT		BREASTFEEDING		POSTPARTUM		TOTAL			
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
None	99.8	99.8	99.8	99.8	100.0	99.8	99.8	99.8		
1-499	0.2	100.0	0.2	100.0	0.0	100.0	0.1	99.9		
500-599	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0		
600-699	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0		
700-805	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0		
806	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0		
807-999										
Median	0.0		0.0		0.0			0.0		
Mean	0.8		0.4		0.0			0.5		
Standard Deviation	17.2		9.5		1.5			11.2		
Percent Reporting	99.9		100.0		100.0			99.9		

TABLE 6.2.4 (CONTINUED)

FORMULA (OZ.)	INFANTS				CHILDREN								TOTAL WIC PARTICIPANTS			
	< 4 MONTHS		4-12 MONTHS		AGE 1		AGE 2		AGE 3		AGE 4				TOTAL	
	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %	%	'Cum %
0	0.5'	0.5	2.0	2.0	95.4'	95.4	99.0'	99.0	99.6'	99.6	100.0'	100.0	98.0	98.0	73.9'	73.9
1 - 499	8.9'	9.4	13.9	15.9	0.9'	96.3	0.1'	99.1	0.4'	100.0	0.0'	100.0	0.4	98.4	3.1'	77.0
500 - 599	0.0'	9.4	0.1	16.0	0.0'	96.3	0.0'	99.1	0.0'	100.0	0.0'	100.0	0.0	98.4	0.0'	77.0
600 - 699	4.0'	13.5	5.7	21.7	0.1'	96.4	0.1'	99.2	0.0'	100.0	0.0'	100.0	0.1	98.5	1.3'	78.3
700 - 805	10.0'	23.5	14.6	40.4	0.2'	96.6	0.7'	99.9	0.0'	100.0	0.0'	100.0	0.3	98.8	3.8'	82.1
806	76.5'	100.0	59.6	100.0	1.7'	98.3	0.2'	100.1	0.0'	100.0	0.0'	100.0	0.6	99.4	17.5'	99.6
807 - 999	'	'	'	'	1.7'	100.0	0.0'	100.1	0.0'	100.0	0.0'	100.0	0.6	100.0	0.3'	99.9
Median	806.0		805.5		0.0		0.1		0.3		0.0		0.1		204.7	
Mean	743.8		710.2		32.5		7.4		1.1		0.3		13.9		191.8	
Standard Deviation	165.2		190.8		161.1		75.2		22.4		14.0		105.8		102.2	
Percent Reporting	99.1		100.0		100.0		100.0		100.0		100.0		100.0		99.9	

* Maximum amount of formula is 806 ounces, but up to 910 ounces can be prescribed based on documented need.

% = Simple Frequency Percent, Cum % = Cumulative Frequency Percent.

percent of the infants under four months of age and 98.0 percent of those between four and twelve months of age received infant formula. This should not be interpreted as showing the extent of breastfeeding among WIC women. Infants being exclusively breastfed are often not counted as WIC participants, although their breastfeeding mothers participate. Similarly, breastfed infants may be prescribed small amounts of formula as supplementary feeding. Approximately 75.8 percent of the younger infants and 59.6 percent of the older infants received the maximum formula allowance of 806 ounces.

Cereal

Cereal was of two types: adult iron-fortified cereal of which 36 ounces was the federally allowed maximum per month, and iron-fortified infant cereal for infants 4 - 12 months of age (24 ounces of cereal maximum). Receiving maximum allowances of cereal were almost an equal percentage of women and infants, each at just under 69 percent (see Tables 6.2.5 and 6.2.7). Less than half the children (48.6 percent), on the other hand, received maximum allowances.

When analyzing the data in Table 6.2.5 care must be taken when comparing the amounts of cereal that infants received to the amounts that everyone else received. Infants receive infant cereal and in a quantity less than the adult cereal women or children receive. Infants under 4 months of age were not included since they were not eligible for any cereal allowance.

Only 0.4 percent of the women, 8.3 percent of the infants (4 to 12 months of age), and 0.6 percent of the children did not get any cereal at all.

Peanut Butter/Dried Peas/Beans

The final food package category includes peanut butter and dried peas or beans. These are alternative selections, since a participant could receive a maximum of either 18 ounces of peanut butter or 16 ounces of dried beans or peas. Neither postpartum women, infants, nor women or children on the special dietary needs packages were authorized to get these food items.

The quantities of peanut butter equivalents prescribed for pregnant and breastfeeding women as well as children are included in Table 6.2.6. This is a measure of the equivalent amount of peanut butter prescribed where 16 ounces of dried peas and beans is made equivalent to 18 ounces of peanut butter. Slightly more breastfeeding women received a allocation from this food group than did pregnant women, and more received maximum allowances. For children there was a trend toward the prescribed amounts increasing with age. From Table 6.2.7 the data show that approximately two-thirds of the women (66.8 percent) and approximately 56 percent of the children received maximum allowances of peanut butter. Note, the percentage receiving the maximum of 18 ounces in Table 6.2.6 differs slightly from the percentage receiving a maximum food package for this item in Table 6.2.7. The reason is that different methods of obtaining the data were used. For Table 6.2.6 dried peas and beans were converted to peanut butter equivalents, but for Table 6.2.7 no conversion was conducted -- the percentage receiving either the maximum peanut butter or maximum dried peas and beans allowance is reflected here. The latter approach gave more accurate results, while the former method made it possible to examine equivalent food quantities. As individual items, peanut butter and dried beans or peas were issued at roughly equal rates.

TABLE 6.2.5.
QUANTITIES OF CEREAL PRESCRIBED TO WIC PARTICIPANTS BY PARTICIPANT CATEGORY.*

CEREAL (OUNCES)	WOMEN									
	PREGNANT		BREASTFEEDING		POSTPARTUM		TOTAL			
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
0	0.3	0.3	0.6	0.6	0.5	0.4	0.4	0.4		0.4
1 - 23	3.4	3.7	3.7	4.3	13.1	13.6	6.4	6.4		6.8
24	3.8	7.5	3.2	7.5	12.0	25.6	6.2	6.2		13.0
25	0.0	7.5	0.0	7.5	1.2	26.8	0.3	0.3		13.3
26	1.0	8.5	0.2	7.7	0.7	27.5	0.8	0.8		14.1
27	0.5	9.0	0.3	8.0	0.5	28.0	0.5	0.5		14.6
28	6.3	15.3	5.1	13.1	2.1	30.1	4.8	4.8		19.4
29	0.3	15.6	0.1	13.2	0.0	30.1	0.2	0.2		19.6
30	11.8	27.4	12.6	25.8	5.0	35.1	9.9	9.9		29.5
31	0.1	27.5	0.0	25.8	0.0	35.1	0.1	0.1		29.6
32	0.3	27.8	0.5	26.3	0.0	35.1	0.2	0.2		29.8
33	0.9	28.7	0.6	26.9	1.9	37.0	1.2	1.2		31.0
34	0.1	28.8	0.4	27.3	0.0	37.0	0.1	0.1		31.1
35	0.1	28.9	0.0	27.3	0.0	37.0	0.1	0.1		31.2
36 +	71.1	100.0	72.8	100.1	63.0	100.0	68.9	68.9		100.1
Median	36		36		36		36			36
Mean	33.3		33.4		31.1		32.7			32.7
Standard Deviation	5.1		5.6		7.5		5.9			5.9
Percent Reporting	99.9		100.0		100.0		99.9			99.9

TABLE 6.2.5 (CONTINUED)

CEREAL (OUNCES)	INFANTS 4-12 MONTHS		CHILDREN												TOTAL WIC PARTICIPANTS	
	% 'Cum %		AGE 1		AGE 2		AGE 3		AGE 4		TOTAL		% 'Cum %	% 'Cum %	% 'Cum %	% 'Cum %
			% 'Cum %	% 'Cum %	% 'Cum %	% 'Cum %	% 'Cum %	% 'Cum %	% 'Cum %	% 'Cum %	% 'Cum %	% 'Cum %				
0	8.3	8.3	1.0	1.0	0.7	0.7	0.1	0.1	0.1	0.1	0.6	0.6	1.7	1.7	1.7	1.7
1 - 23	23.4	31.7	8.2	9.2	5.1	5.8	6.8	6.9	8.1	8.2	7.1	7.7	9.3	11.0	9.3	11.0
24	68.2	100.0	18.6	27.8	11.8	17.6	11.1	18.0	8.5	16.7	13.6	21.3	19.8	30.8	19.8	30.8
25			0.4	28.2	1.0	18.6	0.3	18.3	0.0	16.7	0.5	21.8	0.4	31.2	0.4	31.2
26			2.5	30.7	1.4	20.0	0.7	19.0	0.3	17.0	1.5	23.3	1.1	32.3	1.1	32.3
27			0.0	30.7	0.3	20.3	0.1	19.1	0.3	17.3	0.2	23.5	0.2	32.5	0.2	32.5
28			10.8	41.5	12.6	32.9	12.4	31.5	16.7	34.0	12.6	36.1	8.7	41.2	8.7	41.2
29			0.0	41.5	0.2	33.1	0.0	31.5	0.2	34.2	0.1	36.2	0.1	41.3	0.1	41.3
30			12.8	54.3	12.5	45.6	13.7	45.2	11.0	45.2	12.6	48.8	10.0	51.3	10.0	51.3
31			0.0	54.3	0.0	45.6	0.0	45.2	0.0	45.2	0.0	48.8	0.0	51.3	0.0	51.3
32			1.9	56.2	0.3	45.9	0.7	45.9	1.1	46.3	1.1	49.9	0.7	52.0	0.7	52.0
33			0.5	56.7	2.8	48.7	1.3	47.2	1.9	48.2	1.5	51.4	1.1	53.1	1.1	53.1
34			0.1	56.8	0.3	49.0	0.0	47.2	0.2	48.4	0.2	51.6	0.1	53.2	0.1	53.2
35			0.0	56.8	0.1	49.1	0.3	47.5	0.1	48.5	0.1	51.7	0.1	53.3	0.1	53.3
36 +			43.2	100.0	51.0	100.1	52.4	99.9	51.3	99.1	48.5	100.2	46.7	100.0	46.7	100.0
Median	22.2		30.0		36.0		36.0		36.0		33.0		32.2		32.2	
Mean	20.0		30.0		31.3		31.5		31.5		30.9		29.8		29.8	
Standard Deviation	7.1		6.6		6.0		5.8		5.5		6.1		6.2		6.2	
Percent Reporting	100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0	

* % = Simple Frequency Percent, Cum % = Cumulative Frequency Percent.

TABLE 6.2.6
 QUANTITIES OF NEW PEANUT BUTTER/DRYED BEANS/PEAS EQUIVALENT PRESCRIBED
 TO WIC PARTICIPANTS BY PARTICIPANT CATEGORY*

QUANTITY (Ounces)	WOMEN					
	PREGNANT		BREASTFEEDING		TOTAL**	
	%	'Cum %	%	'Cum %	%	'Cum %
0	32.9'	32.9	27.7'	27.7	31.7'	31.7
1 - 15	1.5'	34.3	1.9'	29.6	1.6'	33.3
16	0.6'	35.0	0.5'	30.1	0.6'	33.9
17	0.0'	35.0	0.0'	30.1	0.0'	33.9
18+	65.0'	100.0	69.9'	100.0	66.1'	100.0
Median	17.0		18.0		17.0	
Mean	12.0		13.0		12.2	
Standard Deviation	8.4		8.0		8.3	
% Reporting	99.9		100.0		99.9	

TABLE 6.2.6 (CONTINUED)

QUANTITY (Ounces)	CHILDREN										TOTAL WOMEN AND CHILDREN'S	
	AGE 1		AGE 2		AGE 3		AGE 4		TOTAL			
	%	' Cum %	%	' Cum %	%	' Cum %	%	' Cum %	%	' Cum %	%	' Cum %
0	47.8'	47.8	32.5'	32.5	31.9'	31.9	29.8'	29.8	37.4'	37.4	35.6'	35.6
1 - 15	5.2'	53.0	9.4'	41.9	5.9'	37.8	2.3'	32.1	6.0'	43.4	4.6'	40.2
16	0.4'	53.4	1.3'	43.2	1.2'	39.0	0.8'	32.9	0.9'	44.3	0.8'	41.0
17	0.0'	53.4	0.0'	43.2	0.0'	39.0	0.0'	32.9	0.0'	44.3	0.0'	41.0
18+	46.6'	100.0	56.9'	100.1	61.1'	100.1	67.1'	100.0	55.6'	99.9	58.9'	99.9
Median	12.0		18.0		17.0		18.0		18.0		18.0	
Mean	9.1		11.6		11.9		12.5		10.9		11.3	
Standard Deviation	8.8		8.2		8.3		8.2		8.5		8.4	
% Reporting	100.0		100.0		100.0		100.0		100.0		100.0	

* % = Simple frequency %, Cum % = Cumulative frequency %.

** Total women excludes postpartum women.

§ Infants and postpartum women not included among total participants.

TABLE 6.2.7
PRESCRIBED MAXIMUM AND NON-MAXIMUM FOOD PACKAGES BY PARTICIPANT CATEGORY (PERCENT)*

FOOD PACKAGE	WOMEN				INFANTS		CHILDREN				TOTAL WIC PARTICIPANTS	
	PREGNANT	BREASTFEEDING	POSTPARTUM	TOTAL	MONTHS		AGE 1	AGE 2	AGE 3	AGE 4		TOTAL
					1 - 3	4 - 12						
Milk												
Maximum	54.3	60.4	37.9	50.4	NA	NA	25.1	32.4	36.9	33.8	30.9	37.0
Non-Maximum	45.7	39.6	62.1	49.6	NA	NA	74.9	67.6	63.1	66.2	69.1	63.0
Formula												
Maximum	0.0	0.0	0.0	0.0	75.8	59.6	3.4	0.2	0.0	0.0	1.3	17.8
Non-Maximum	100.0	100.0	100.0	100.0	23.3	40.4	96.6	99.8	100.0	100.0	98.7	82.1
Eggs												
Maximum	97.8	95.9	86.4	94.1	NA	NA	82.2	84.9	85.4	81.8	83.5	86.9
Non-Maximum	2.2	4.1	13.6	5.9	NA	NA	17.8	15.1	14.6	18.2	16.5	13.1
Juice												
Maximum	75.6	75.4	80.4	77.0	NA	38.3	48.1	53.6	53.6	50.6	51.1	56.1
Non-Maximum	24.4	24.6	19.6	23.0	NA	61.7	51.9	46.4	46.4	49.4	48.9	43.9
Peas/Beans												
Peanut Butter												
Maximum	65.7	70.5	NA	66.8	NA	NA	47.1	57.4	61.3	67.3	56.1	59.6**
Non-Maximum	34.3	29.5	NA	33.2	NA	NA	52.9	42.6	38.7	32.7	43.9	40.4**
Cereal												
Maximum	71.1	72.8	63.0	68.9	NA	68.3	43.2	51.0	52.4	51.4	48.6	56.9
Non-Maximum	28.9	27.2	37.0	31.1	NA	31.7	56.8	49.0	47.6	48.6	51.4	43.1
Total Food Package												
Maximum	36.6	46.1	32.2	36.8	76.5	12.9	11.6	15.8	17.1	15.6	14.5	27.1
Non-Maximum	63.4	53.9	67.8	63.2	23.5	87.1	88.4	84.2	82.9	84.4	85.5	72.9
Percent Reporting	99.9	100.0	100.0	100.0	99.1	100.0	100.0	100.0	100.0	100.0	100.0	99.9

* Maximum plus non-maximum percentages within each food category sum to approximately 100.0 percent.

** Data differ slightly from that in Table 6.2.6 due to the use of different methods. See text for explanation.

Since peanut butter and dried peas and beans are different food items, each was reported separately whether only one was prescribed or whether they were provided as alternatives to one another. Thus, a person could receive maximum peanut butter or maximum dried peas or beans, but the maximum amounts of both were recorded if the participant had a choice. The conversion of dried peas and beans to peanut butter equivalents was conducted only if a maximum peanut butter amount was not specified; thus, a person is assumed to have received the maximum of one or the other but not both.

6.3 Maximum Food Package Issuance

Some of the data from Table 6.2.7 which describe the percent of maximum and non-maximum food packages and food package items prescribed for each participant category already have been presented. The focus here will be on the total food package. First, considering the food package as a whole, only 27.1 percent of all WIC participants received a maximum food package defined as consisting of maximum quantities of all food items allowed under Federal regulation. Consideration has been given to participants, such as infants and postpartum women, who are not issued all food items (indicated by "NA" in the table). A one-month old infant, for example, is considered to receive a maximum food package if s/he gets 806 ounces of infant formula and nothing else. One also could get a maximum food package without receiving food items that are part of special diets (e.g., special formula).

Examining individual food items indicates that eggs are prescribed in maximum quantity more often than any other food item, while formula (which is given only as part of a special diet for women and children or as a routine diet for infants) was least prescribed. Juice, Peanut Butter/Dried Beans or Peas, and Cereal all were prescribed in maximum quantities between 50 percent and 60 percent of the time. Milk was given in maximum quantity only to 37 percent of the WIC participants.

Comparing across participant categories, it was clear that young infants (under four months of age) and women (especially breastfeeding women) received maximum food packages most frequently -- 76.5 percent and 36.8 percent of the time, respectively. Older infants (four to twelve months of age) and one-year-old children received maximum food packages least frequently -- 12.9 percent and 11.6 percent of the time, respectively.

The primary reason for the low percentage of maximum food packages among older infants was that juice was not prescribed in maximum amounts very frequently. For children, especially one-year-olds, milk usually was not provided in maximum quantities, and this appears to explain why they usually did not receive maximum food packages.

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